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# Metropolitan Housewives' Attitudes toward Solid Waste Disposal

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# Metropolitan Housewives' Attitudes Toward Solid Waste Disposal

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When enlisting the citizen's help to alleviate our environmental problems, it is important to understand their attitudes and knowledge. Are housewives willing to separate their "trash" at home? Who do they believe is responsible for pollution? Or for cleaning it up? The answers to these and other questions found in ~~this~~ survey should be of help to planners and designers; in this way, educational and other programs can be drawn to secure maximum cooperation.

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# METROPOLITAN HOUSEWIVES' ATTITUDES TOWARD SOLID WASTE DISPOSAL

by

National Analysts, Inc.
1015 Chestnut St.
Philadelphia, Pennsylvania 19107

Contract No. 68-03-0059
Program Element 1D1312

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The Solid Waste Research Laboratory of the National Environmental Research Center, Cincinnati, U.S. Environmental Protection Agency, has reviewed this report and approved its publication. Approval does not signify that the contents reflect the views and policies of this laboratory or of the U.S. Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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# FOREWORD

Man and his environment must be protected from the adverse effects of pesticides, radiation, noise and other forms of pollution, and the unwise management of solid waste. Efforts to protect the environment require a focus that recognizes the interplay between the components of our physical environment - air, water and land. The multidisciplinary programs of the National Environmental Research Centers provide this focus as they engage in studies of the effects of environmental contaminants on man and the biosphere and in a search for ways to prevent contamination and recycle valuable resources.

When enlisting the citizen's help to alleviate our environmental problems, it is important to understand their attitudes and knowledge. Are housewives willing to separate their "trash" at home? Who do they believe is responsible for pollution? Or for cleaning it up? The answers to these and other questions found in this survey, published by the National Environmental Research Center, Cincinnati, should be of help to planners and designers; in this way, educational and other programs can be drawn to secure maximum cooperation.

# ACKNOWLEDGEMENTS

The findings presented here are the result of a two-phase study on homemakers' attitudes toward solid waste disposal conducted by National Analysts, Inc. for the Environmental Protection Agency. Topics included for investigation were dictated by the initial request for proposal issued by the Environmental Protection Agency as amended by the initial exploratory phase of this study. These are detailed in Chapter I following.

We gratefully acknowledge the continued assistance of Mr. Richard Ongerth, Project Officer, Environmental Protection Agency, for his direction and guidance throughout both phases of the contract work and for his invaluable support in preparation and review of the final report.

On behalf of National Analysts, Inc., implementation and interpretation of the exploratory phase was the responsibility of Dr. Frank D. Millman. Implementation, interpretation and synthesis of the exploratory and field phases were the joint responsibility of Lorna R. Sherman and Pettersen Marzoni, Jr. Multivariate analysis of Phase II findings was the joint responsibility of Mr. Marzoni and Dr. Marshall G. Greenberg.

## SUMMARY OF MAJOR FINDINGS

1. There appears to have been a dramatic increase in knowledge about and concern with the problem of solid waste in the relatively short time period between completion of the qualitative phase of this study in early September, 1971 and collection of quantitative data during March and April, 1972.

2. Most metropolitan housewives understand the terminology used in discussions of the solid waste problem. The perceptions of the majority as to the meanings of some of this terminology indicate that:

   - "Protection of the environment" is generally related to the problems of pollution and to preservation of natural resources.
   - "Protection of the environment" and "preservation of natural resources" are considered important national problems, fifth and seventh respectively among eleven problems whose seriousness housewives were asked to evaluate. They are considered less serious than issues of narcotics and drug usage or of crime and violence. They are clearly of greater concern to housewives than are transportation, education or racial problems.
   - "Solid waste" most often means "rubbish", "trash", "junk" or "garbage".
   - "Recycling" is most often perceived by the housewife to be synonymous with "reprocessing".

3. Housewives feel it is their responsibility, with assistance from the government (rather than the responsibility of industry) to take the major initiative in reducing the nation's solid waste problem. They tend neither to blame nor to exonorate industry as the major producer of pollution. They

are somewhat neutral in their attitude about how much of the financial responsibility for cleanup should fall on industry.

4. Housewives believe that one of the things which they are able to do in reducing solid waste is to assist in facilitating recycling efforts. Recycling, they generally believe is a necessary and practical step in solid waste reduction.

5. The most meaningful benefits perceived from recycling relate:

   - Most often to conservation of natural resources

   - Secondly to reduction of air pollution by reduction of burning of such wastes

6. Virtually all metropolitan housewives (90%) express willingness to separate their trash to facilitate recycling. About half feel that such activity should be mandatory rather than voluntary. Were separation of trash required, however, housewives claim they would prefer to have it done at the household level rather than pay even a minimal ($1-a-year) fee to the municipality to have it done for them.

7. Despite their concern about the solid waste problem and their expressed desire to do something about it, few housewives have taken any direct action in the past. Those who have done so have cooperated only minimally. The root of the problem appears to lie in the lack of an authority to reinforce positive attitudes and to channel current and future efforts.

   - There is a very low level of knowledge about local recycling activities (if, in fact, any such activities exist).

   - During the past year, relatively few have engaged in solid waste reducing activities on a regular basis.

The single activity most regularly reported has been purchase of soft drinks and beer in returnable bottles. (The relative availability of returnable -- rather than disposable bottles -- was not assessed.)

8. There are no strongly-held negative attitudes toward the acceptability of products made of or packaged in recycled materials. Housewives tend to believe that most waste, with the exception of "slick" magazines and plastic bottles can be recycled successfully.

9. Review of housewives' current perception of practices in regard to solid waste disposal indicate that:

    - Collection is most often believed to be a direct municipal function
    - Approximately one-third are unaware of what becomes of their trash once it is removed from their premises
    - Cost of solid waste disposal is included in taxes or rent, and therefore, the true cost is an unknown quantity to most

10. Most housewives have on-premises outdoor space for accumulation of solid waste between collections, and requirements for separation of articles into two or three categories would cause undue hardship (from the standpoint of required space) for only a small proportion of housewives.

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# I. INTRODUCTION

## A. Purpose and Scope of the Study

### 1. Purpose of the Study

In order for the Environmental Protection Agency to enlist the help of the individual American citizen in alleviating the problems associated with the disposal of solid wastes in our country, it was first deemed important to understand the knowledge and attitudes which are the major determinants of current practices. Only through such understanding can educational and other programs be designed to secure maximum cooperation in future efforts to halt (and even to reverse) the ever-increasing accumulation of solid waste with which the American life-style and a growing population threatens us.

### 2. Scope of Work

The scope of the study, as initially outlined, was to explore:

- Housewives' knowledge (or misinformation) of current solid waste management practices and efforts in their communities -- particularly as these relate to compositions of waste, value of resources lost in waste disposal, and overall costs of waste handling and disposal.
- The influences of advertising, packaging, and other marketing considerations in establishing personal and family consumption habits. Housewives' overt or subconscious awareness of the importance of these matters to their own behaviors were to be examined in depth.

- The current or potential means and procedures by which housewives can reduce the amount of solid waste generated by their households. The opportunities that women perceive for reducing generation of waste -- e.g., elimination of new paper shopping bags at each visit to the supermarket (a la shoppers in England who bring their own net or plastic bags for carrying purchases home), purchase of unwrapped groceries, complaints to store managers and/or manufacturers about "overpackaging" of products, etc. were to be explored. Moreover, the willingness of housewives to alter their consumption habits was to be investigated.

- Acceptability and probable use of products containing reclaimed and recycled materials. The materials that are specified for inclusion here were newspapers, aluminum, glass and packaging (food and non-food), including plastics of various kinds.

- Current and potential interest of housewives in facilitating the recovery and recycling processes by separating and/or returning specific solid waste components, to include cans, bottles, and papers. Additionally, we attempted to discover probable effects of incentives or penalties for compliance or lack of compliance with such separation efforts.

All the areas outlined above were included in the Environmental Protection Agency's Scope of Work. Additionally, the Environmental Protection Agency accepted National Analysts, Inc.'s suggestion for inclusion in the Scope of Work of:

- The dual role that the housewife plays, or can assume, in her general sociopolitical activities. At the same time, her alter ego existence as a citizen/constituent who can lend or withhold support from the public or private activities of others should not, we believed, be ignored. Consequently, we proposed, in all relevant areas of inquiry, to interrogate women not only as consumers but as potential promoters of the general welfare of our country.

- Finally, since past studies conducted by National Analysts which were concerned with analogous aspects of housewife behavior had demonstrated the usefulness of undertaking appropriate segmentations of the total universe of housewives into groups having obvious relevance to those activities being examined, we proposed that such segmentation be included in analysis of the data.

## 3. Summary of Methodology

While it cannot be denied that all, regardless of sex, age or place of residence, contribute to the problem, the bulk of solid waste is generated in the household. Further, the problem increases in severity as population density increases -- and the relationship between problem severity and population density is likely to increase by a geometric, rather than arithmetic, ratio. It was, therefore, determined that this study confine itself to the female head of household* -- as principal determinant of household patterns -- and to those living in urban and suburban areas.

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*Our "female head of household" differs from the Census definition in that it does not confine itself to households with no male head. See Appendix A.

In conducting a study where little previous research has been reported, National Analysts, Inc. believes that the value of the information gathered in the field survey can be immeasurably increased by a preliminary investigatory phase designed to establish the meaningful parameters of the field study, to evaluate initial goals and generate additional hypotheses to be tested, and to formulate a questionnaire which uses language both meaningful and unambiguous to respondents. To that end this project was designed as a two-phase study.

- Phase I consisted of a series of twelve Group Depth Interviews, two each being conducted in six cities: Boston, Massachusetts; Cincinnati, Ohio; San Francisco, California; Atlanta, Georgia; Houston, Texas; Seattle, Washington.

  Group Depth Interviews were conducted during August and September, 1971.

  A further description of Phase I respondents is included in Appendix A of this report.

- Phase II consisted of individual personal interviews with female heads of household in 68 metropolitan areas in the United States, based on an area probability sample of such areas. The study plan provided for one call-back at each household in an attempt to reach those unavailable upon initial contact. In some instances more than one call-back was, in fact, made. A total of 1,281 interviews was completed. Field interviews were conducted during March and April, 1972.

## C. Organization of This Report

1. The report which follows has been organized into the following chapters:

- Housewives' attitudes toward solid waste and recycling. This chapter will explore such issues as the perceived seriousness of the solid waste product per se and vis-a-vis other national attitudes relevant to recycling, as well as attitudes toward products made of recycled materials.

- Housewives' knowledge about solid waste and related environmental problems. This chapter will investigate what women "know" about these topics. It should be noted that the chapter on "attitudes" precedes that on "knowledge" for two important reasons. First, much of the "knowledge" has little or no basis in fact. Secondly, and more important, people behave out of what they believe to be true (i.e., according to their attitudes), regardless of objective considerations. Attempts to influence behavior must, therefore, rely first on capitalizing on positive attitudes and/or changing negative attitudes and secondly on providing factual information which may or may not influence behavior.

- Housewives' current practices in regard to solid waste disposal. This refers to current behavior which needs to be encouraged and/or points out those behavioral patterns which need to be altered if inroads are to be made against the accumulation of solid wastes in this country.

- Interpretation of study findings.

- Recommendations for future action.

- Appendices. These present details on sample selection, copies of field documents used in data collection, and an explanation of tabulations used to analyze results, with special emphasis on a nontechnical and technical discussion of the segmentation analysis of results.

2. Within each of the three chapters dealing with study findings, the chapter has been organized to present:

   - An explanation of the kinds of questions used to elicit the information presented and the relationship of these questions to the Scope of Work detailed earlier in this chapter and an overview of the findings.

   - The actual questions used, with an explanation of the interviewing technique, where applicable.

   - A point-by-point exposition of findings.

3. The chapter on interpretation of study findings draws upon both Phases I and II of the study and will discuss:

   - What housewives "know" about the problem.

   - What they appear willing to do about it.

   - What knowledge or attitudinal changes appear needed to implement the goal of coping with the solid waste problem.

4. Percentages presented in the report are based on the number of respondents answering each question. In most cases percentages will refer to the total sample. Although the analysis involved a number of demographic cross-tabulations in addition to the segmentation analysis, reference to these will be made only when:

   - Differences between groups are sufficiently large to warrant comment.

   - Anticipated differences between groups do not, in fact, exist.

# II. HOUSEWIVES' ATTITUDES TOWARD SOLID WASTE AND RECYCLING

## A. Introduction and Summary

1. As was stated earlier, people do not always behave "logically", that is, with strict reference to objective facts; rather, behavior is a response to "facts" filtered through personal understanding and prejudice. The purpose of this chapter, therefore, is to examine this "personal understanding and prejudice" -- the attitudes which dictate individual behavior.

   The specific areas covered in this chapter are:

   - The importance of the solid waste problem.
   - Attitudes toward protection of the environment and where responsibility is placed both for pollution and cleanup.
   - Attitudes toward solid waste and pollution.
   - Attitudes toward individual effort to prepare solid waste for recycling and the relationship of such efforts toward reducing the solid waste problem.
   - General attitudes toward recycling and recycled materials; willingness to cooperate in recycling programs.

   Each of these areas is directly or indirectly related to all but the first point outlined in the Scope of Work in Chapter I above.

2. While small minorities (approximately 20%-30%) of metropolitan housewives in America indicate either confusion or ignorance about the meaning of such terms as "protection of the environment", "solid wastes", and "recycling", most are able to give pertinent and lucid definitions for these phrases without need for further explanation.

Moreover, the average housewife voices a substantial degree of concern about the problems of ecology and environment to which these terms relate. Although the extent of her concern about these matters is not so great as it is for issues of narcotics and drug usage or of crime and violence, it clearly outstrips her worry about transportation, education, and racial problems.

In large majority (94%), metropolitan housewives agree that "we need to do something about pollution now before the problem gets too big to handle". Very few (21%) believe "there is little that individual people can do about pollution". Further, there is strong agreement (81%) that "recycling of solid wastes would help greatly in cutting down on pollution".

Primary virtues for recycling, as these respondents perceive them, are first, conservation -- "it would save our resources by using up less iron ore, fewer trees, and so on" -- and, a close second, less air pollution -- "it would mean less trash was burned, and that would cut down air pollution".

The necessary first step to initiate a recycling program is the sorting of solid wastes into more or less homogeneous groups of materials. Housewives can undertake this operation in their own households without any further involvement in the recycling process. And, indeed, at least 90% of metropolitan housewives say they would be willing to separate some of their trash from the rest if they were asked to do so.

Perhaps recognizing the frailty of their own personal good intentions, as well as mistrusting the promises of their sisters, more than half of the women (53%) feel that in-home separation of items for recycling should be required of everyone, and not be put on a voluntary basis.

Only one housewife in 11 claims that it would be difficult for her to separate trash into three categories --

glass and cans, newspapers, everything else -- if she were required to do it. Almost one-third (30%) say it would be a very easy task for them. Moreover, assuming that their trash must be separated in this fashion, 9 out of 10 women state that they would prefer to do it themselves rather than paying increased taxes to have the city or town do the job.

Many housewives are uncertain about whether or not they have ever purchased any one of seven specifically suggested products made of or packaged in materials which are completely or partially reprocessed. This uncertainty, among other factors, may help to account for the fact that the large majority of housewives expect products made of recycled materials -- except in the extreme instance of recapped tires and, to a lesser extent, wool clothing -- to be as good as products made of all new materials, with respect to appearance, serviceability, and usefulness.

## B. Summary of Questions upon Which Conclusions in This Chapter Are Based

Appendix B of this report contains the questionnaire and interviewing materials used in this study, in their entirety, for those who wish to pursue this matter further. In this and succeeding chapters, questions from which the chapter data derived have been paraphrased and the appropriate question number from the questionnaire indicated in parenthesis.

### 1. Importance of the solid waste problem

- Respondents were presented with a 5-point scale where "1" meant "not at all serious"and "5" meant "very serious". They were then read 11 national problems, one at a time, and asked to indicate the number on the scale which best reflected their attitude about the seriousness of that problem.

(Question 1)

2. Attitudes toward protection of the environment and placement of responsibility both for pollution and cleanup

- Respondents were permitted to respond freely regarding their understanding of the meaning of "protection of the environment".

  (Question 2)

- On a 5-point scale ("1" meant "disagree";"5" meant "agree") items were included about:
  - The seriousness of the pollution problem
  - Whether or not individual effort can help reduce the problem
  - The urgency about doing something
  - The financial role of government and industry in cleaning up pollution (2 items)

  (Question 14)

3. Attitudes toward solid waste and pollution

- Open-end definition of "solid waste"

  (Question 3)

- On 5-point "disagree/agree" scale, an item about:
  - Responsibility of individuals versus industry in creating solid waste

  (Question 14)

- Usefulness of eight selected individual actions in reducing solid wastes

  (Question 24)

4. Attitudes toward individual efforts on behalf of recycling and benefits to be derived therefrom

- Open-end definition of "recycling"

  (Question 10)

- On 5-point "disagree/agree" scale, an item about:

  - Usefulness of recycling in reduction of solid wastes

  (Question 14)

5. General attitudes toward recycling and recycled materials; willingness to cooperate in recycling programs

- On a 5-point "disagree/agree" scale, items about:

  - Influence on neighboring communities of having an active recycling program nearby

  - Willingness to buy things made of or packaged in recycled materials at a cost savings

  - Willingness to select brands made of or packaged in recycled materials, if these were easily identified

  - Suggestion that manufacturers not using some recycled materials be taxed to help cleanup solid wastes

  (Question 14)

- Rank ordering of four most important from among six suggested benefits of recycling.

  (Question 15)

- Willingness to separate solid wastes in each of four different ways; opinion that such separation should be voluntary or required; reasons for that opinon.

  (Questions 16, 17 and 18)

- How easy or difficult it would be to separate solid wastes into three categories, if it were mandatory; reasons for calling it difficult; if this was the respondent's opinion.

  (Questions 19 and 20)

- Presented with a list of 11 actions which could reduce solid wastes, respondents were asked first whether they would be willing to do each on a voluntary basis and then whether each should be required by law.

  (Questions 22 and 23)

- Willingness to participate in three specific recycling activities if the respondent had not done so in the past year.

  (Question 27)

- Perceived appearance, serviceability or usefulness of seven selected items when made entirely or partially of recycled materials.

  (Question 32)

6. General attitudes toward extra fees for extra trash, extra fees for failure to separate solid wastes, willingness to make the separation or have it done by the municipality -- both generally and at four suggested annual price levels

   (Questions 28,29, 30 and 31)

## C. Study Findings

### 1. Importance of the solid waste problem

Even while acknowledging that because of the selectivity of respondents and small sample size of the Group Depth Interview, one cannot help being struck by the marked change in awareness of the seriousness of the solid waste problem in the six months between Phases I and II of this study. The exploratory phase tended to indicate little awareness of solid waste as a serious national problem. Only a few ecologically-minded and involved individuals expressed any concern about the problem; most housewives viewed the issue from a purely personal standpoint, related to the bother and inconvenience of disposing of household trash.

In contrast to these Summer, 1971 attitudes, the 1972 findings show that among 11 current national problems presented to metropolitan housewives, two issues relating to recycling of solid wastes receive mean rankings for their perceived seriousness about midway along the list. Rated on a 5-point scale (1 = not at all serious; 5 = very serious),"protection of our environment" ranks fifth with a mean rating of 4.1. "Using up our natural resources" ranks seventh with a mean rating of 3.9.

Reading from the top of the rating list, "narcotics and drug usage", "crime and violence", "inflation", and "taxes", clearly outrank ecological and environmental problems in their perceived seriousness. "Deterioration of the cities" ranks sixth, about on a par with the two recycling concerns. Continuing down the list, "racial problems", "education", "overpopulation", and "transportation" rank eighth through eleventh, respectively.

There is no consistent pattern of differences by any of the demographic subgroupings of housewives. A slightly greater concern among younger people with the ecological and environmental problems is not large enough to be significant.

For those housewives who have a high degree of concern (5 on the rating scale) with "protection of the environment", this issue rises to the top of the ranking list and mean ratings for seriousness of every other issue also increase, while maintaining the same rank order.

This phenomenon also occurs almost identically for "using up our natural resources". In this second instance, however, concern with "protection of our environment" moves up to become slightly more serious than "taxes". More dramatically, the rating for seriousness of "overpopulation" rises to eighth in importance, contrasted with tenth in importance for the total sample.

## 2. Attitudes toward protection of the environment and placement of responsibility both for pollution and cleanup

- "Protection of the environment"

Perhaps surprisingly, this polysyllabic mouthful conveys pertinent meanings -- without any misconception -- to a clear majority (60%) of metropolitan housewives. Almost half (48%) associate it with pollution of water and/or air, while about one-third (32%) relate it to preservation of natural resources. Smaller fractions mention cleanup and/or disposal of trash/litter/refuse as well as acquiring or regaining pride in our environmental surroundings.

One housewife in ten admits that she does not know what the phrase means and three times as many (30%) offer a definition that is irrelevant -- e.g., control of crime, protection of the elderly, improved housing, etc. It should be noted that only 19% of all respondents gave a completely confused definition, while 11% gave both an irrelevant and a meaningful response.

Among the several subgroups by which the data were analyzed, ignorance and confusion about the meaning of "protection of the environment" are greater among housewives 35 years and older than among younger women, and greater among blacks than among whites. The occurrence of accurate definitions increases steadily with the growth of annual family income. Respondents in the "Hit-or-Miss" segment with respect to concern about housekeeping* are better informed than those in other segments.

- Responsibility for pollution and cleanup of the environment

The magnitude of the pollution problem is generally perceived as great. The burden of responsibility for cause and cleanup is perceived as resting on government and individuals more than on industry.

- The large majority of housewives agree strongly that "we need to do something about pollution now before the problem gets too big to handle". The mean rating for this statement is 4.8. (Strongly Agree)

- Very few agree that "the problem of pollution in this country is really not as big as some people say it is". The mean rating for this statement is 2.0. (Disagree)

- "There is little that individual people can do about pollution" receives a mean rating of 2.1. (Disagree)

- "The cost of cleaning up pollution should really fall on industry, not on the average individual' receives a mean rating of 3.2. (Neutral)

- "The government must spend more money to clean up pollution" receives a mean rating of 4.0. (Agree)

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*See Appendix D for details on segment analysis.

There are no differences of significance among various demographic subgroups, although there is some indication that younger housewives and women with higher family incomes may place increased stress on the feeling that something can and must be done about pollution.

## 3. Attitudes toward solid waste and pollution

### • "Solid wastes"

The variety of relevant meanings associated with this phrase is substantially greater than that for "protection of the environment", although relatively few housewives cite many of them. Only 1 in 12 (8%) does not know any meaning for "solid wastes".

Echoing the findings in Phase I, rubbish/trash/junk/garbage are the most frequently mentioned synonyms for solid wastes. Rubbish/trash/junk (51%) and garbage (41%) are by far the most frequently named among all subgroups of women. More "sophisticated" definitions of solid wastes tend to be named mainly by housewives with higher family incomes and/or more education: sewage/human waste/excrement, industrial wastes, waste material that is not degradable follow this pattern. Litter, on the other hand, is mentioned more often by women with lower income or less education.

Recycling is associated with the term by a few women, most often by those with more than a high school education.

### • Individual versus industry responsibility for creation of solid wastes

While industry is not condemned for creation of solid wastes, neither is it exonerated. Housewives appear to feel that responsibility must be shared by both individuals and industry -- neither is completely guilty; neither is completely blameless.

- "Most solid waste is caused by industry, not by individual people" receives a mean rating of 3.0. (Neutral)

- Usefulness of specific actions in reducing solid waste

Despite their professed concern with matters related to solid waste problems and, as will be demonstrated subsequently, their recognition of the possible benefits to be realized from recycling programs, it is evident that many metropolitan housewives are uncertain about what actions may or may not be helpful in cutting down the solid waste problem.

Their lack of competent and authoritative direction for making effective individual contributions to the reduction of solid waste often leads them to conflicting and self-defeating judgments.

Among all metropolitan housewives more than 70% believe that making a compost pile is helpful; acceptance of this view is higher among women living away from the Northeast Census Region, and outside of central cities in SMSA's. Belief in the helpfulness of this action also rises significantly as family income increases and is greater among those whose concern about using up natural resources is high or moderate rather than low. (It is questionable whether or not 70% of all metropolitan housewives know what a compost heap is, how it is prepared, how it is subsequently used, and finally, even if all other elements are present, whether 70% of all housewives have use (let alone a need) for compost. The demographic differences cited add to skepticism one feels at the magnitude of response to this item.)

Between 5 to 6 out of 10 housewives judged as "helpful" actions, such alternatives as buying a rooted

Christmas tree to be planted later, buying paper-, rather than plastic-wrapped products, using aluminum rather than steel cans, using a trash masher, recapping tires, and using outdated appliances rather than new ones.

4. Attitudes toward individual efforts on behalf of recycling and benefits to be derived therefrom

- "Recycling"

Among the 4 out of 5 (82%) metropolitan housewives who associate meanings with this term, the paramount emphasis is on reprocessing materials for reuse: melting down of glass and metals, reprocessing of litter and trash, shredding or liquifying of paper. Only about 1 in 5 (22%) refers to reuse of items without reprocessing.

Housewives in the Far West Census Region relate reprocessing of metals, paper and glass to "recycling" substantially more often than any other subgroup, although their mentions of reprocessing litter and of reuse without reprocessing do not vary appreciably from the national total. Only 6% of these women associate no meaning with the term.

Greater knowledge and wider range of associations are exhibited by women with higher incomes as opposed to those with lower incomes, by whites as opposed to blacks, by housewives with high concern about using up natural resources as opposed to those with low concern.

The only clear pattern of differences vis-a-vis "recycling" among housewives in the several factor segments, is that those in the "Hit-or-Miss" and "Obligated"* segments appear more knowledgeable and seem to have a somewhat wider range of associations with the term.

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*See Appendix D for details on segment analysis.

- Benefits to be derived from recycling

  Housewives in the group sessions had had experience with saving newspapers for recycling. Older housewives recalled recapping of tires and saving of food cans for reprocessing during World War II. The idea was not new to many. The same situation appeared among the respondents of the field portion of this study. The notion that using old articles to make new ones will, ultimately reduce the amount of solid waste generated by people seems natural and inevitable. There are no strongly-held negatives to this concept.

  - "Recycling of solid wastes would help greatly in cutting down on pollution" receives a mean rating of 4.4. (Agree)

## 5. General attitudes toward recycling and recycled materials; willingness to cooperate in recycling programs

- Women believe that the example of a successful recycling program in a nearby community can serve to facilitate establishment of such programs in surrounding communities. They are somewhat ambivalent about buying articles made of recycled materials. Such purchases would be more attractive if they resulted in lower costs. While there is slight agreement that women would seek out and purchase brands made of or packaged in recycled materials, there is no real conviction evidenced that this is more than lip service.

  Finally, while attitudes toward the role of industry in creating solid waste tends to be neutral, housewives agree that manufacturers who do not use a proportion of recycled materials in their products or in packaging should be taxed for the purpose of helping to dispose of solid wastes.

  - "People in towns which do not have a recycling program would be more likely to want such a program if other, nearby towns, had an active program for handling solid wastes" receives a mean rating of 4.2. (Agree)

- "People would be more willing to buy things made of or packaged in recycled materials if it cost less than things made of or packaged in all new materials" receives a mean rating of 4.3. (Agree -- but note if in the statement)

- "If people knew which brands of the products they buy are made of or packaged in recycled material, they would be more likely to buy those brands" receives a mean rating of 3.8. (Mildly agree)

- "Manufacturers should be taxed to help dispose of solid wastes if they do not use a certain amount of recycled materials in their products or packaging" receives a mean rating of 4.0. (Agree)

Women who express greatest concern about "protection of our environment" and/or "using up our natural resources" tend to agree with each of these statements with slightly greater enthusiasm than do those who have moderate or low concern with either of these concepts.

- Specific benefits to be derived from recycling

From a list of six possible benefits that might be claimed for recycling, housewives selected the one benefit they believe is most important, the one they felt is second most important, third most important, and fourth most important.

"It would save our resources by using up less iron, fewer trees, and so on" was named most often as the most important benefit, receiving the votes of about one-third (34%) of the women. Coupled with a 22% mention as the second most important benefit, this claim for recycling ranks as first or second in importance among more than half (56%) of all housewives.

Running closely behind with 28% mention as most important and 30% as second most important, "it would mean less trash was burned, and that would cut down air pollution" thus also ranking first or second in importance among more than half (58%) of all housewives.

The other four possible benefits of recycling lag far behind these first two, with little to choose among them, except perhaps among blacks who stress lower cost of trash collection and less litter on highways, rather than fewer or smaller dumps, or even conserving natural resources.

It is noteworthy that housewives in the Far West are much more often concerned with conservation of resources than are women in other regions. Stress on conservation rather than on collection costs or concern about dumps also increases markedly as family income rises. This obviously is true also for those with high or moderate concern about "using up our natural resources".

- Willingness to separate solid wastes and attitudes toward this task

Only one metropolitan housewife in 25 (4%) states categorically that she will not voluntarily attempt in any way to separate her household trash (and garbage) so as to help facilitate recycling processes. Apparently, given suitable motivation (that could range, of course, from the simplest request by friends to a do-it-before-we-make-you ultimatum from civil authorities), the great majority of these women believe they have sufficient concern and cooperative spirit to take the essential first step toward resolving urgent problems of solid waste pollution.

Regardless of the kind or degree of in-home trash separation proposed, at least 9 in 10 metropolitan housewives profess willingness to comply voluntarily. Within this atmosphere of nearly unanimous feeling, significant differences among attitudes of demographic subgroups are difficult to find.

The data reveal barely discernible patterns of increasing reluctance for voluntary action depending upon decreasing living space available, with residents in detached houses most willing to comply and apartment-dwellers least willing to do so. Even among the latter, however, at least three-quarters of the housewives say they will act voluntarily in response to appropriate request.

There appears to be a true dichotomy of feeling among housewives regarding the need and/or the desirability for governmental enforcement (at whatever level) of their cooperation with regard to in-home separation of trash.

A small majority (53%) of the metropolitan women feel that legal authority would be required to insure performance. Such women tend to feel that "people" will comply only if they are made to do so. These feelings are more characteristic of women residing outside the central cities of SMSA's, whites, housewives from high income families, and those residing in detached homes than of women who do not enjoy these advantages.

On the other hand, about 1 out of 5 metropolitan housewives (20%) feel that voluntary action is more likely to result in cooperation. This feeling is most often expressed by homemakers in the West and least often by those in the Central region of the country.

Only a small minority believe that separation is necessary because it will facilitate recycling (11%) or because it will save tax money (7%).

- Perceived ease or difficulty associated with separation of solid wastes into three categories

  When women are asked about the ease or difficulty of separating solid waste, only 9% of metropolitan housewives complain that it would be difficult for them to comply with a requirement that they separate their household trash into three categories -- glass bottles or jars and cans, newspapers, everything else. Almost three-quarters (73%) acknowledge that this task would be easy or even very easy for them.

  Differences in attitude on this issue seem to follow no consistent pattern among pertinent demographic subgroups, except that only small minorities of each claim that the task would be difficult.

  Among the handful of women (8%) who feel such a task would be difficult for them, their distress ranges from the amount of time required to the need for physical exertion.

  These findings tend to confirm hypotheses generated in the Group Depth Interview sessions, where it was found that most respondents were quite willing to sort their solid waste into two, three or four categories for recycling. They were, however, very reluctant to go further than this in sorting and there were hints of even greater resistance to bringing their sorted materials to a collection center or recycling plant. A few women pointed out that it was wasteful, time-consuming and very discouraging to have to bring newspaper to one plant, cans to another, and glass to a third plant...possibly in different directions.

- Recycling activities which housewives believe would reduce solid wastes; activities in which they would cooperate voluntarily

  Apparently there also is a great untapped potential for voluntary cooperation among metropolitan housewives for resolution of solid waste and recycling problems that transcends mere willingness to accept the in-home inconvenience of time and physical effort involved in trash separation.

Substantial fractions of homemakers indicate that they would be willing voluntarily to undertake many individual actions if only they were asked to do so. Some claim that they are already complying voluntarily with actions that reduce solid wastes, as will be detailed in Chapter IV. Over and above those who say they have done so in the past year:

- About half would:
  - Save cans from soft drinks, beer and canned foods, and return them to a collection center (55%)
  - Save newspapers, bottles, jars and cans for someone to come collect (48%)
- Under one-half, but at least 4 out of 10 would:
  - Buy brands of products which are made of or packaged in recycled materials (45%)
  - Avoid products which come with unnecessary or too much packaging (45%)
  - Save bottles and jars and return them to a collection point (44%)
  - Save newspapers and return them to a collection point (43%)
  - Take back large grocery bags to the supermarket so their purchases can be put in them again (41%)

- About one-third would:

    - Avoid products which come in plastic bottles or packages (30%)
    - Cut down on usage of paper products such as paper towels, cups, etc. (32%)

- About one-fifth would:

    - Use only returnable deposit bottles for soft drinks and beer (20%)
    - Pay a tax on non-returnable one-way bottles (17%)

There are variations in regional responses as to which of the above actions metropolitan housewives would or would not undertake on a voluntary basis. For example, homemakers in the West express willingness to avoid products with unnecessary packaging and to avoid products in plastic packaging more often than do homemakers in other regions. Homemakers in the South are more likely than others to say they would save newspapers, bottles, jars and cans either for someone else to collect or for transport to a collection point. Central region homemakers express greater willingness than others to save cans and return them to a collection point and to bring their own paper bags back to the supermarket for reuse. The Northeastern homemaker expresses more willingness than others to buy products in packaging made of recycled materials and to purchase beverages only in returnable deposit bottles. There is no clear-cut rationale by which to explain these regional idiosyncracies.

- Perceived appearance, serviceability or usefulness of seven selected items when made partially or entirely of recycled materials

As will be detailed later in this report, housewives are uncertain about whether or not they have purchased products made of or packaged in recycled materials. Despite this uncertainty, relatively small proportions of metropolitan housewives (14%-27%) are unwilling to make a judgment about the appearance, serviceability, or usefulness of such products versus those made of or packaged in new materials. Specifically investigated were glass bottles, boxes for hardware, furniture, etc., food and beverage cans, newspapers, cereal boxes, woolen clothing and recapped tires.

Moreover, perhaps because they suspect they have bought recycled materials and mistakenly regarded them as new, the large majority of the women state that most products made of recycled materials are just as good as those made of all new materials.

The primary exception to this generality is recapped tires (the possibility that this is a carry-over from World War II rationing seems negated by the lack of differentiation among age groups of respondents). Secondary rejection of wool clothing made from reprocessed wool may be related to the recent strong trade promotion of virgin wool, to the personal, intimate attributes of clothing or to actual experience with garments made wholly or in part of clearly-identified reprocessed wool.

Products made of recycled materials tend to be more acceptable to:

- Those with the greatest concern about using up our natural resources.
- White, rather than black, homemakers.
- Those in higher income brackets. There is a direct linear relationship for each of the seven products investigated between family income and percentage believing that a reprocessed product compares favorably with one made of all new materials.

## 6. General attitudes toward extra fees for extra trash; willingness personally to separate trash into different categories

- When asked whether fees for trash collection should be variable with the amount disposed of, most (76%) feel that such a practice should not be permitted. Homemakers living in the Northeast and in urban areas (where such practice is currently not standard), as well as younger, lower income, and black housewives are more opposed to charges based on volume of trash disposed of than are their counterparts.

- More than 2 women in 5 (43%) believe that householders who do not separate their own trash should pay extra for trash collection.

- The basic spirit of voluntary cooperation in contributing to resolution of solid waste and recycling problems that characterizes metropolitan housewives throughout their testimony reported here is particularly evident when they are confronted with a choice between self-help versus municipal responsibility for trash separation.

  Aside from the scant 4% who continue to resist the entire concept of household trash separation, preference of these women is in the ratio of 15 to 1 (90% versus 6%) for doing it themselves rather than having the job done by the city or town in which they live, at some added cost in taxes paid.

  This reliance on the virtue of do-it-yourself endeavor persists even when housewives are confronted with the option of near-to-negligible annual fees payable by them to the municipality for its assuming the task of properly separating their household trash. Were this fee as low as only one dollar per year, nearly half (48%) of the homemakers still say they would rather do it themselves:

| | |
|---|---|
| - Would do it myself regardless of cost | 48% |

  - Would have municipality do it if cost were:

| | |
|---|---|
| $1 a year | 28% |
| $5 a year | 14% |
| $10 a year | 8% |
| $25 a year | 2% |

- One must, however, accept these findings with caution. When asked about the desirability of eleven participatory tasks which would reduce solid waste, slightly more than one-third (38%) opposed any legal enforcement. Favorable attitudes toward legal enforcement was expressed by:

  - Just under half of all housewives in regard to:

    - Saving newspapers, bottles, jars and cans for someone to come collect (46%)

  - Approximately one-third in regard to:

    - Using only returnable deposit bottles for soft drinks and beer (36%)

    - Saving newspapers and return them to a collection point (34%)

    - Saving bottles and jars and return them to a collection point (33%)

    - Saving cans from soft drinks, beer and canned foods, and return them to a collection center (33%)

  - Approximately one-quarter in regard to:

    - Avoiding products which come with unnecessary or too much packaging (26%)

    - Buying brands of products which are made of or packaged in recycled materials (24%)
    - Paying a tax on non-returnable one-way bottles (23%)

- One-fifth or slightly fewer in regard to:
    - Avoiding products which come in plastic bottles or packages (20%)
    - Cutting down on usage of paper products such as paper towels, cups, etc. (19%)
    - Taking back large grocery bags to supermarket so their purchases can be put in them again (16%)

## D. Conclusions

The metropolitan housewife has become increasingly aware of and concerned about the problem of solid waste disposal. She clearly recognizes her share of responsibility in creating the problem and expresses a desire to help in alleviating it.

It is clear, however, that women need direction in channeling their efforts to this end. Some of their judgments about how to reduce solid waste bear little relationship to their lives (as, for example, composting). Others reduce the bulk of the trash (as, for example, trash mashers) without reducing the problem.

Women perceive recycling as a means of reducing solid wastes, cutting down on pollution and conserving natural resources all at the same time. With the exception of recapped tires and clothing made wholly or in part of recycled wool, there are no strong currently-held negative attitudes toward purchase and use of articles made of recycled materials.

Virtually all housewives say they would voluntarily separate their solid wastes into three categories if requested to do so. The majority would prefer making this separation themselves, rather than having it done for them by the municipality at as low a fee as $1-a-year.

While most women say they would comply with requests to make such separation, they appear to doubt whether "the others" would be similarly cooperative. Many believe that there should be an extra fee for trash collection imposed on those who do not separate their wastes, while at the same time rejecting the idea of basing trash collection fees on quantity of solid waste generated by their household.

In sum, attitudes are favorable for cooperation with a program of solid waste reduction, providing education and guidance is made available to homemakers.

With this as a background, the next chapter will examine housewive's current level of knowledge about solid waste disposal within their own communities and about recycling.

## III. HOUSEWIVES' KNOWLEDGE ABOUT SOLID WASTES AND RELATED ENVIRONMENTAL PROBLEMS

### A. Introduction and Summary

1. Any future efforts by the Environmental Protection Agency must build on housewives' attitudes. At the same time, the current level of "knowledge" must be assessed in order to understand both what actual gaps exist and what erroneous "knowledge" must be corrected.

The preceding chapter indicated that the majority of housewives have a lucid and essentially correct understanding of some of the basic terminology -- "protection of the environment", "solid wastes" and "recycling". Their attitudes toward the benefits of recycling indicate clearly that the "conservation" aspects are most meaningful to them. "Reduction of pollution", is the second most meaningful approach in enlisting their cooperation in attacking the "solid waste" problem.

The specific areas covered in this chapter are knowledge of:

- Patterns of solid waste disposal within the local community
- Knowledge of which solid wastes can be recycled, with specific emphasis on food and beverage cans
- Awareness of local recycling activities
- Familiarity with products made entirely or partly from recycled materials

Whereas the topics discussed in Chapter II were directed at all points of the Scope of Work mentioned in Chapter II except the first one, this chapter is devoted exclusively to that area of investigation -- namely, housewives' knowledge (or misinformation) of current solid waste management practices and efforts in their communities -- particularly as these may relate to composition of waste, value of resources lost in waste disposal, and overall costs of waste handling and disposal.

2. A majority of metropolitan housewives report that the sanitation department run by their local government is responsible for disposal of solid waste in their community. A small proportion report personal responsibility for waste disposal. Recycling centers play only a negligible role in disposal of solid wastes.

   About half of all housewives report paying for solid waste disposal either in the form of taxes or as part of their rent, while just over a quarter are billed separately for this service. A majority admit to having given little or no thought to the cost of trash disposal prior to being interviewed.

   Distressingly, fewer than one-third of all metropolitan housewives presently are aware of any specific groups or organizations that have been participating in recycling activities in their immediate areas.

   Large proportions of the housewives interviewed do not hesitate to state their belief that a considerable variety of household solid waste items can be recycled -- ranging from newspapers and bottles through food/beverage cans and old clothing to automobile tires. The only articles, among those specifically included for investigation, which a majority of housewives do not positively believe can be recycled are "slick paper" magazines and plastic bottles.

When they are questioned more thoroughly about food and beverage cans, significant proportions of housewives acknowledge "awareness" that such containers may be made of aluminum, tin, steel, etc. Large majorities believe that each of these kinds of containers can be recycled.

Generally, quite small proportions of these women positively recall ever having purchased items made of recycled materials -- ranging from a scant 4% who know they have bought cereal boxes made from used paper up to 35% who know they have bought recapped tires. Nevertheless, in the instances of each recycled article about which they were questioned, a majority of all housewives are not sure whether they have ever purchased such an item made of recycled materials.

## B. Summary of Questions upon Which Conclusions in This Chapter Are Based

### 1. Patterns of solid waste disposal within the community and cost to the household

- How the community collects solid waste (Question 4)
- How the household pays for collection of solid waste (Question 5)
- Amount of solid waste generated by the household in an average week (Question 9)
- Whether or not cost is dependent on the amount of waste generated by the household (Question 6)

- Awareness or consideration of the cost to the household for solid waste disposal prior to the interview

  (Question 7)

- Ultimate disposition of the solid waste generated by the household

  (Question 8)

2. Knowledge of which solid wastes can be recycled

- "Knowledge" of the ability to recycle nine kinds of solid waste generated by most households

  (Question 11)

- Awareness of metals and alloys used for food and beverage containers and to recyclability of each

  (Questions 12 and 13)

3. Awareness of local recycling activities

   (Question 25)

4. Awareness of having purchased seven specific products made wholly or in part from recycled material

   (Question 33)

## C. Study Findings

### 1. Patterns of solid waste disposal within the community and cost to the household

- Solid waste is most often reported to be collected by the city or town using its own sanitation department (68%). In some areas collection and disposal is performed by a private collector. Only occasionally does it appear that the responsibility falls directly upon the respondent. It should not be inferred that all of a respondent's waste is collected by a single method. In some small proportion of cases respondents named more than a single method of waste disposal, as evidenced by the fact that responses totaled over 100%.

Collection by the city or town's own sanitation department is most frequently reported in all regions of the country and in both urban and suburban communities; reliance on private collectors, however, is more frequently reported in the Central region and in suburban communities than in other geographic regions or in urban communities.

- More than half (54%) of all housewives claim that the cost of solid waste disposal is included in taxes or rental fees. About half that number (27%) are billed separately.

Considerable regional variations in billing methods are reported. A larger proportion of homemakers in the Northeast than in other regions say waste collection costs are included in tax or rent money -- that is to say by a method that does not single out the cost of collection. Thus, housewives in this region are likely to be less aware of the actual costs involved than are their counterparts in other regions of the country.

Suburban housewives are equally likely to have trash collection costs billed separately as they are to have them included as part of their taxes. By contrast, urban housewives are far more likely to pay for trash collection along with other taxes or as part of rental payment.

A large proportion of apartment dwellers (81%) believe that the cost of trash collection is included in their rental fees. An additional 16% admit to being unaware of how this cost is met. Thus, one may safely conclude that housewives who live in apartments seldom have direct involvement in paying for trash collection.

- Housewives were asked to estimate the amount of trash disposed of weekly and to report this amount in terms of 20 gallon trash cans. The average amount was approximately two such cans, with most respondents reporting between 1½ and 4 cans a week or their equivalent.

  Discussion of demographic differences on this question is, of course, a meaningless exercise, since it would need to be related to other variables such as to size of family, style of life, and so on.

- A vast majority of housewives (83%) say that the cost of collecting their trash is independent of the amount of trash disposed of. Those who report that costs vary dependent on the amount of trash put out for collection are more likely to live in:

  - The West (20%) or Central (19%) regions as opposed to the Northeast (12%) or South (6%)
  - Detached homes (18%) as opposed to row houses or duplexes (11%) or apartments (1%)
  - Suburban areas (20%) as opposed to urban areas (8%)

- About two-thirds of all housewives (65%) admit to never having considered the cost of trash disposal prior to interview. Understandably, those who have not usually been charged based on volume (or who have not been billed separately for trash disposal) -- i.e., housewives in the Northeast, in urban areas, in lower income groups and apartment dwellers -- are less likely than their counterparts to have given previous thought to this matter.

- Approximately one-third (30%) of all housewives are unaware of what becomes of their trash once it is removed from their premises. The single most frequently held belief is that it is taken to an open dump (26%). About 1 in 5 say it is taken to a sanitary landfill. In reviewing these data, the caution must be inserted that the report of what happens to trash represents the respondents' expectations of what happens, and does not necessarily present a true picture of how communities or private collectors dispose of solid waste.

Housewives in the West appear more knowledgeable than those in other areas of the country about what happens to their trash. Those who live in apartments, as opposed to other types of dwelling units, tend to be less knowledgeable on this score.

It should be noted that differences in knowledgeability are minimal among groups expressing high, moderate or low concern with either protection of the environment or using up our natural resources.

## 2. Knowledge of which solid wastes can be recycled

- There is widespread belief (ranging from 89% down to 55%) among metropolitan housewives in all age groups that newspapers, bottles, old cars, cardboard boxes, food and beverage cans, old clothing, and automobile tires can be recycled successfully. Somewhat more than 2 in 5 women in every age group also believe that magazines with "slick" paper (e.g., Life, Newsweek) can be recycled, but only a substantial minority (25%) name "plastic bottles" as a product that can be recycled. A larger proportion of housewives under 25 years of age than housewives in other age groups believe plastic bottles are recyclable.

Women with family income of $10,000 or more generally have greater trust in the recyclability of most products than women with lower family incomes; white homemakers are more likely to consider a wider variety of products recyclable than are black homemakers. The sole exception, both in terms of income and of race is in regard to "plastic bottles", where the only differentiation made is among those under 25, as noted immediately above.

- Regardless of their demographic characteristics or factor segmentation, remarkably few metropolitan housewives seem to be aware that "tin" cans (named by 49% of all homemakers) for foods and beverages actually are made of tinned steel or tin-free steel and "awareness" of aluminum cans (55% of all homemakers) far exceeds their true proportion in the marketplace.

The large majority of homemakers agree that food and beverage containers are recyclable. A vast majority (90%) "attest" the recyclability of aluminum containers, while a substantial proportion (72%) feel this is true of "tin" containers. Regardless of the metal or alloy named as being used for food and beverage containers, a majority believe such containers can be reprocessed, ranging from a low of 58% for those who believe such containers are made of zinc to the 90% cited above.

## 3. Awareness of local recycling activities

- Across the nation only 30% of all metropolitan housewives claim to know about any specific groups or organizations in their immediate areas that are participating in recycling activities.

- There are major residential differences in this awareness. Among women residing in the Far West Region (44%) and outside of central cities in SMSA's (42%), the proportions are sharply higher. Similarly, awareness of operational recycling agencies is directly related to family income of respondents -- ranging from 16% for women with family income under $5,000 per year up to 52% for women with annual family income of $15,000 or more. There is an analogous increase in awareness as educational level goes up, and housewives aged 25-34 years are more aware of on-going recycling agencies than are women either younger or older.

## 4. Awareness of having purchased seven specific products made wholly or in part from recycled materials

- Housewives were asked whether or not they had ever purchased seven specific products made of or packaged in recycled materials. Included were:

  - Products like cereal in packages made from used paper

  - Products like hardware, etc., in cartons made from used paper

  - Food and beverages in recycled cans

  - Products in recycled glass bottles

  - Newspapers

  - Wool clothing made from partly reprocessed wool

  - Recapped tires

- The majority of metropolitan housewives are uncertain whether they have ever bought any of these fairly widely-used articles. The sole exception noted is recapped tires; even here one-third (36%) do not know whether they have made such a purchase.

  Characteristically, lack of sureness about purchase of recycled items is consistently higher (except for recapped tires) in the South Census Region and among blacks. Conversely, positive awareness of purchase for most items is higher among young housewives and those women with higher annual family incomes.

  (It should be observed, however, that the questionnaire did not include any measures of frequency of ownership or usage that could enable more precise objective or quantitative estimates of relative possibilities of such purchases. Consequently, findings here must be regarded as essentially qualitative and subjective.)

## D. Conclusions

Homemakers most often state that their solid waste is collected by their local government's sanitation department. Once the trash has been removed from their premises, many (one-third) are unaware of what becomes of it. Of the various alternative ways women believe the trash could ultimately be disposed of, the one most frequently conjectured is that it is taken to an open dump. Even this "knowledge" is held by only 1 in 4 housewives.

Since the cost of trash collection and disposal is most often said to be included in taxes or rental fees (thus billed separately in only a minority of cases) most housewives are unaware of the actual cost to them for disposing of their solid waste.

A majority of women believe that a great deal of the "trash" generated by the household can be recycled successfully. The ability to recycle "slick" magazines successfully is a belief held by fewer than half of all homemakers. The single item of household waste which most (3 out of 4) believe cannot be recycled successfully is plastic bottles. Although, as demonstrated in the preceding chapter, women hold no strong negative attitudes toward purchase of items made wholly or partially of recycled materials, a majority are uncertain as to whether or not they have ever purchased such items.

Few women are aware of local recycling activities. Whether, in fact, such activities do not exist or whether it bespeaks lip service rather than a genuine interest in the problem was outside the purview of this study.

With this understanding of the metropolitan housewife's current attitudes toward the solid waste problem, her current level of knowledge about solid waste disposal in her community and her beliefs about recycling, the following chapter now investigates the housewife's current practices.

# IV. HOUSEWIVES' CURRENT PRACTICES IN REGARD TO SOLID WASTE DISPOSAL

## A. Introduction and Summary

1. This chapter is directed at providing an understanding of the metropolitan housewife's current practices in regard to solid waste disposal.

   The specific areas covered in this chapter are:

   - The basic psychology and attitudes underlying current practices
   - The extent to which housewives have participated in recycling activities in the past year

   The first of these areas is related to that portion of the Scope of Work directed at understanding the role of advertising, packaging and other marketing considerations which underlie current practices. The second area speaks directly to the current role of homemakers in reducing the amount of solid waste being generated within the household.

2. Encouraged by promotional and marketing strategies which emphasize "newness" and are based on planned obsolescence, the average American housewife has developed a "throw-away" psychology which engenders, rather than reduces, solid wastes.

   Housewives' current practices are most often directed at doing what is easiest and most convenient for them. Few report regular adherence to a mode of behavior which could appreciably decrease the solid waste problem. The one action which could reduce solid waste substantially and which was most frequently reported to be performed on a regular basis was purchase of soft drinks and beer in returnable bottles.

Current practices are generally not related to lack of household space for storage of recycled materials.

## B. Summary of Questions upon Which Conclusions in This Chapter Are Based

### 1. Promotional and marketing strategy and the "throw-away" psychology

The role of promotional and marketing strategy on current behavior was investigated only in the Group Depth Interviews (Phase I) of this study.

### 2. Current practices

- Housewives were asked how frequently during the past year they had engaged in eleven practices which could reduce the amount of solid waste generated by the household. These were the same practices reported in Chapter II. The earlier chapter discussed the housewife's willingness to undertake these actions on a voluntary basis and her attitudes about making such actions mandatory and legally enforceable.

  (Question 21)

- A question was asked about cooperation in local recycling activities during the past year, including participation in promotional activities, collection and/or donation of recyclable materials.

  (Question 26)

- Questions were asked about where trash cans are currently kept, as well as about availability of storage space for collection of recyclable materials and/or separation of solid wastes.

(Questions 35 and 36)

## C. Study Findings

### 1. Promotional and marketing strategy and the "throw-away" psychology

- The only individuals in the Phase I groups who currently seemed strongly concerned and active -- or even potentially active -- in relation to solid wastes management and recycling were women with some awareness of and emotional involvement in the larger issue of "ecological planning for conservation of natural resources" and "preserving a cleaner, purer environment for all people". Most other individuals seemed subject to the cultural and economic trends in our society which move totally in the opposite direction and encourage:

  - Change (for the sake of change)

  - Planned obsolescence

  - Newness (What's new must be better)

  - Disposability: It's cleaner, easier, safer, cheaper to throw away and replace with new things

  - Convenience: Non-return bottles mean fewer trips back to the store or fewer annoyances when you go back to the store; disposable products mean less time and effort for cleaning, ironing, folding and storing than, for example, permanent towels, linen, tablecloths, napkins, handkerchiefs, cleaning cloths, etc.

- Conspicuous consumption: To buy, spend, acquire flashy possessions, discard things as soon as they seem old or out of style, and to repeat this process endlessly has become associated with admired goals and values -- success, status, high standards of living, youth, glamour, optimism, faith in our economy.

. At some point in the group discussions, many respondents expressed dawning recognition that throwing things away, quickly, casually and automatically, had become a reinforced habit pattern. They felt it would be difficult to overcome this automatic response without making a strong, conscious effort and receiving frequent reminders aimed at motivating them to try to acquire a new habit pattern.

As one example, a housewife in one group session commented that although she had paid extra to have a garbage disposal appliance installed in her kitchen and had looked forward to this convenience, she found she rarely used it. Most of the time food garbage was thrown into a rubbish bag automatically, before she realized what she was doing.

Other women had been saving newspapers for fund-raising purposes for organization which were paid for delivering these to recycling plants. They said, however, that frequently they found themselves throwing away -- or even burning -- the newspapers they had intended to save.

Sooner or later, a few women in each group became defensive about their role either in generating or disposing of solid wastes and began blaming "them".

"Them" was "the unknown other"; it was the faceless, anonymous scapegoat represented by industry and government. Industry, in particular, was blamed for generating and promoting the disposable paper products, one-way bottles and cans, excess packaging and non-biodegradable plastics which contribute to this problem. Both industry and government were blamed for not doing anything about it; i.e., industry was criticized for not doing anything voluntarily to stem the tide of disposable and non-biodegradable products for the public; government was blamed for not passing laws, levying taxes, banning and enforcing more vigorously in the interests of preserving the natural environment and reducing wastes.

## 2. Current Practices

- Housewives were presented with a series of practices which, if followed, could reduce the amount of solid wastes generated by a household. They were asked to indicate whether they had engaged in each of these regularly, occasionally, or not at all in the past 12 months.

  Well over half of all housewives report that in the past year they did not engage at all in 10 of the 11 practices presented. The sole exception, purchase of soft drinks and beer in returnable deposit bottles is said not to have been done at all by one-third (33%) and to have been done "occasionally" by 4 out of 10 (40%). It is important to recognize that this action may well have been a function of what was available for purchase, rather than as a result of deliberate choice on the part of the housewife.

Further analysis of this list tends to indicate that cooperation in cutting down on solid waste is highly dependent on the effort required by the housewife. Thus, reporting of "regular" or "occasional" efforts reveals:

- 42% saved bottles, jars and cans for someone else to pick up
- 34% saved and took newspapers to a collection point
- 32% saved bottles and jars and took them to a collection point
- 14% saved cans and took them to a collection point

While between one-quarter and one-third of all metropolitan housewives say they "regularly" or "occasionally":

- Paid a tax on one-way bottles*
- Bought brands of products packaged in recycled materials
- Avoided "overly-wrapped" products
- Cut down on use of paper towels, paper plates, and so on

These actions may be classified as things over which housewives had little choice or control, with the possible exception of reports of decreased use of paper goods in the home.

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*Whether or not any such local taxes exist is problematic. One such item was included in Question 21 of the questionnaire; 15% said they had done this "regularly", 19% said "occasionally" in the past year.

It should be noted that only one housewife in twenty says she "regularly" or "occasionally" returned large grocery bags to the supermarket for re-use in her own purchases.

As the age of the homemakers decreases and as the household income increases, the tendency to report participation in solid waste reducing activities tends to increase. Interestingly, expressed concern with protection of the environment or with using up our natural resources bears little relationship to behavior during the past year.

- Housewives were asked about availability of space where solid wastes can be accumulated and where such wastes are currently kept. Implications of such information in terms of potential programs promoting or requiring separation of different kinds of wastes in the future are self-evident.

A vast majority report one or more areas where solid wastes may be accumulated, with fewer than 1 out of 10 (8%) reporting absence of such areas.

- 81% have space outside for trash cans
- 52% have a garage
- 48% have a basement for their own use

Trash cans are most often kept outdoors. Only a very small number of housewives (2%) -- all apartment dwellers -- have no need for trash storage receptacles, disposing of their solid waste in the apartment incinerator. Trash cans are reported usually kept:

| | |
|---|---|
| - Outside, in no enclosure | 57% |
| - Outside, in a bin or box | 23% |
| - Garage | 12% |
| - Basement | 4% |
| - In the kitchen | 3% |
| - In the house in the utility room | 2% |
| - In a utility building outside the house | 1% |

## D. Conclusions

Current practices among metropolitan housewives tend to run counter to the expressed level of interest in the solid waste problem and the desire to "do something" about it.

The exploratory phase of this study indicated that women are entrenched in a "throw-away" psychology where convenience and conspicuous consumption are key considerations. These attitudes stem from promotional and marketing practices, as well as from social pressures.

Few housewives, it was disclosed, are aware of local recycling activities; few have been directly involved in such activities. Although a slightly larger proportion have engaged in activities which could have an impact on the solid waste problem, such actions appear to have been independent of a concerted effort to reduce solid waste.

There is ample evidence that, if separation of wastes were to be suggested on a voluntary basis, and if women were to carry through with their expressed willingness to cooperate on a voluntary basis:

- Ample reminders to re-educate habit patterns will be required

- Lack of space for such separation will not constitute a barrier to compliance.

## V. INTERPRETATION OF RESULTS

### A. Current Level of Knowledge

- Metropolitan housewives are aware that the problem of solid waste is among the more pressing national problems, and feel that unless immediate steps are taken to cope with the situation the nation is faced with a task which will become overwhelming in proportions.

- The problem of solid wastes is seen as a threat both from the standpoint of pollution of air and water and of exhaution of our supply of trees, metals and other natural resources. "Recycling" is considered a means of protecting our dwindling supply of natural resources, cutting down on pollution of air and water, as well as combatting the unsightly problem of litter.

- "Knowledge" of what materials can or cannot be recycled and the quality of products made from recycled materials is subject to question. With the sole exceptions of "slick" magazines and plastic bottles, women believe most household waste can be recycled and that most articles made wholly or in part from recycled materials are "just as good" as the same articles made entirely of virgin materials. On the other hand, relatively few homemakers are aware of having purchased items made of or packaged in wholly or partially recycled materials.

- While some actions which housewives believe would reduce solid waste are sound, there are a number of fallacies and inconsistencies in what housewives "know" to be measures which would reduce solid wastes. For example, half of all homemakers believe that using trash mashers or plastic trash bags will reduce the solid waste problem with little awareness that the former reduces only the bulk of solid waste and that the latter is in direct contrast to their belief that plastic is not biodegradable or recyclable. A large proportion believes that buying products packaged in paper rather than plastic, without mention of recycling the paper, could be another step toward the desired goal.

Wider use of aluminum food and beverage cans (which are more generally believed to be recyclable than steel cans), in preference to cans made of steel, is seen as another way of reducing solid wastes.

- There is little awareness of how household solid waste is ultimately disposed. Most housewives report that it is collected by the municipality's own sanitation department, but there is considerable variation in what they say happens to that waste once it is removed from the premises. Almost one-third admit to not knowing what becomes of their solid waste once it has been removed.

- Housewives generally are not aware of the cost of collection and disposal of household wastes. A majority claim that such cost is included in taxes or rental fees, hence is an unknown quality as a separate item. Although it was not an area of investigation in this study, the hypothesis is advanced here that if this one-quarter who claim to be billed separately for this service had been asked to name that cost and it were compared with actual costs, findings would have indicated that women either would not have known or would incorrectly have reported the annual cost to them for trash disposal.

- There is currently a lack of knowledge about local recycling activities. Only a relatively small proportion of metropolitan housewives are aware of any group or organizational recycling efforts in their immediate localities. They state, rather strongly, that knowledge of a successful effort occurring in nearby communities would act as an impetus to efforts in other nearby communities.

## B. Expressions of Willingness to Cooperate in Waste Reduction Activities

- The key words in assessing housewives' willingness to participate in the kinds of activities which would reduce the solid waste problem is "voluntary for me, mandatory for them". Most housewives say they are:

  - Willing to separate trash into three categories -- newspapers, bottles and cans, everything else -- themselves rather than have the municipality do it for them at a nominal $1 annual fee.

  - Willing to save newspapers, cans and bottles for recycling particularly if someone else collects them rather than having the housewife herself assume responsibility for getting these discards to a collection center.

  - Willing to help in publicity or promotional work on behalf of recycling activities.

  On the other hand, a majority believe that trash separation should be mandatory rather than voluntary, with better than one-third expressing the belief that this is the only circumstance under which people will, in fact, cooperate.

## C. What Housewives Need to Know

- Women appear ready and willing to assist in reducing the solid waste problem in this country. They do, however, appear to need direction in channeling their efforts.

- There is clear-cut evidence that housewives need to be made aware of the direct and indirect cost to them of the solid waste now generated by the household, since most are not billed for such service as a separate item. Women are unlikely to consider the initial cost of extra wrappings, paper goods and disposable packaging and the way this affects their total household budget. There is clear evidence from the study that the cost of solid waste disposal is unknown to many women.

- Housewives must be given a clearer understanding of what materials are and are not recyclable. This is particularly important if efforts are to be mustered to encourage use of products which reduce solid wastes.

- Expectations that products made of or packaged in recycled materials are "just as good as" those made of virgin materials could become a major barrier to cooperation with recycling efforts if, in fact, such products are less attractive or less serviceable. It is vital, therefore, that information regarding any deficiencies in such materials be honestly stated in order to avoid disillusion about the value of recycling.

- There were implications made in both the Group Depth Interviews and the field study that housewives do not take into consideration the cost involved in operating recycling plants. They believe that using recycled articles should provide them with some cost savings. Should it fail to do so, it seems logical to expect that housewives will see manufacturers as profiteering on their (the housewives') efforts and be considerably less willing to cooperate with recycling programs.

## VI. RECOMMENDATIONS

The general thrust of all the field study findings strongly suggests that EPA public relations endeavor and communications media coverage over the past months have brought about significant positive changes in attitudes and the potential for constructive action among metropolitan housewives across the country.

The following recommendations represent an integration and interpretation of the findings of both phases of this study. They focus on immediate and short-term suggestions rather than on longer-ranged plans since the processes involved require re-education of consumer attitudes and behavior. The overall long-ranged goal is to reduce the overall amount of solid waste generated by the household, despite the increase in our national population. Such a goal clearly demands trial and adjustment. Unforeseen benefits and barriers will derive from each step along the way; thus constant re-evaluation and shifts in emphasis or direction will be dependent on the relative success of each step along the way.

### A. Education and Information

#### 1. An integrated, unified approach

The most important overall need for both motivating and educating housewives and for reducing the frustrations, inconsistencies and discouragement that may be experienced along the way, is a continuous program and overall philosophy for solid waste management. What is needed is a program which is consistent, integrated and coordinated on both the national and regional levels.

## 2. Kinds of information needed

### • The "jargon" of environmental protection

Although a majority of housewives understand the terms "environmental protection", "solid waste", and "recycling", the terms are still not universally understood, nor are the meanings of these phrases the same for all people. Reinforcement of the positive connotations of these phrases, and the use of synonyms to educate and/or re-educate the uninformed can provide a starting point for making everyone aware of the nature of the problem. "Spot" announcements and commercials on radio and television which relate "environmental protection" to decreased pollution and preservation of national resources, "solid waste" to disposables and to litter and "recycling" to conservation seem warranted.

### • The cost of solid wastes

Housewives (and all other residents of this country) must be sensitized to the total cost of solid waste. This should begin with an understanding of how unnecessary packaging materials, paper goods and disposable bottles add to the cost of the products consumers purchase. To these must then be added the cost of trash pick-up and solid waste disposal, including local, then regional, and finally national costs for solid waste management. Homeowners and renters must be made to be aware of the amount of money -- in taxes or other costs -- they are paying (directly or indirectly) for waste removal and disposal, particularly since these are usually not billed separately. Future projection of costs, if the problem does not diminish, may be startling and useful for dramatic effect, but people are likely to be more concerned with today's cash outlay than the threat of some vague tomorrow when they, themselves, are not around to "pay the fiddler".

The cost in non-financial terms -- i.e., pollution and eventual depletion of trees, ore and other natural resources are more esoteric and, therefore, likely to appeal only to the militant but still numerically-small environmentalists. Nonetheless, such information can be used to reinforce attitudes generated by discussion of purely economic considerations.

. Recycling

Information on location and activities of ecology and solid waste clubs throughout the country is urgently needed. Women have indicated their belief that knowledge of successful recycling efforts in a neighboring community can spur the efforts of other groups. It must be stressed that collection and sorting activities need not be confined to housewives. Men's fraternal and community groups, Scouts, junior high school and high school civic action groups must all be drawn into the picture and their activities publicized. Failure to do so may well undermine women's determination to help in this effort by making their contribution appear like "do-gooder" activities or making them feel they are the "trash-pickers" for the community. The more totally all community elements can be drawn into the effort, the more likely the success of such efforts. The lessons of total mobilization of the community for a common goal during World War II, and more recently during various local disasters (earthquakes, floods) should not be lightly dismissed.

Housewives need authoritative information about the kinds of products, materials and wastes which can be recycled at the present time (in different parts of the country) and what materials cannot be at our present state of technology (and in relation to current economics involved). The reasons why some materials still cannot be recycled (e.g., consumers do not understand why newspapers are accepted but not magazines, etc.) should be spelled out.

Consumers should be told how recycling affects appearance, serviceability and cost of products they buy, lest expectations and reality are so far apart that further cooperation is discouraged.

## B. Community Mobilization

### 1. Providing direction to consumers

The bulk of the evidence suggests that effective enlistment of voluntary participation by metropolitan housewives in coordinated action programs is not only practicable but also is much more desirable than regimentation by legal constraint. The very large majority of women say that they personally would be willing to take constructive actions voluntarily. In only one instance throughout the inquiry did even a slight plurality suggest that an action should be required of everyone in order to make "other" people cooperate.

One cannot naively assume that educating people to the nature of the problem and offering steps to alleviate it will cause overnight dramatic changes in behavior. Such results are slow in achievement. People long suspected that smoking was "not good for you". The Surgeon General's Report on Smoking and Health brought about some temporary change in behavior: some people stopped smoking, some reduced the number of cigarettes or the amount of each cigarette smoked. Many of those who "quit" or "cut down" are back to smoking at their pre-report levels and new "smokers" are coming into the market each day. The reaction to the report changed behavior without, for many, changing the attitudes underlying that behavior.

If the efforts to reduce solid wastes are to prove more than a passing fad, basic attitudes must be altered along with basic behavior patterns. If the community was organized on a voluntary basis to new ways of viewing their purchases, if all consumers were taught to re-evaluate their "throw-away" psychology, if manufacturers were enjoined from planned obsolescence, if prompt and expert service were available for major appliances and automobiles,a large step forward will have been taken in reducing bulky solid wastes. This would mean undertaking a slow, subtle shift from a "keep-up-with-the Jones'" approach to life to a "these-are-the-kinds-of-things-(education, vacation, travel, hobbies, etc.)-you-could-be-enjoying" attitude.

As for that solid waste which a household must generate, retraining of the individual's method of sorting, separating or handling solid waste so that it becomes "no more difficult" than the old ways (or only so slightly more difficult that it does not really matter) could be accomplished providing readily recognized rewards are stressed. Such rewards could encompass less litter, hence fewer insects and rodents and ultimately less disease borne by these pests. They could, as far as feasible include reduced costs for now over-packaged products, lower trash collection costs and so on.

## 2. Consumer suggestions for reduction of solid wastes

Consumers in Phase I suggested the following actions might be effective in reducing solid waste.

- Encourage municipalities to institute more severe limits on how many cans of garbage and trash may be put out for collection...either with an obsolute limit on number of cans, size of cans and frequency of pickup, or by providing for extra charges, taxes or direct costs whenever the householder exceeds these limits.

- Encourage shopping, buying procedures and practices which cut down on excess trash. But provide examples and alternatives, e.g., taking fewer brown bags at the supermarket; more use of permanent reusable bags brought from home; avoidance of products with excess superfluous packaging or wrappers.

- Encourage consumer groups to pressure local stores to stop packaging fresh meats and produce (fruits and vegetables) in plastic trays and polyethylene wraps.

- Remind consumers to think about purchases and use of products with some attention to producing minimal throw-away trash, (e.g., "For just one or two items, please don't wrap it" or, "I'll take that without a bag", or "In a choice between two brands of this soft drink flavor, I'll take the one in a returnable bottle.")

- Helping consumers to buy products with more consideration of propensity for contributing to the trash and refuse problem also implies a program to provide greater incentives to use returnable bottles and to favor products which are almost fully consumed or which have the minimum of irreducible residue.

### 3. Incentives for manufacturers

Quantitative data indicate that industry is not currently regarded as the prime source of generation of solid waste and therefore responsible for its cleanup. If, however, individual citizens participated actively in reducing solid wastes and industry did not, people might become less charitable in their assessment of industry's role and responsibility in creation and correction of the problem. Further, the suggestion of a more frugal psychology is one which industry is not likely to accept with any enthusiasm.

There are, however, ways in which to enlist industry's cooperation and make the entire matter more palatable. The circular arrow symbol which indicates that all or part of a product's materials are recycled is relatively unknown. Promotion of that symbol, acknowledgement of cooperating firms, publicity for a company which takes positive steps to reduce solid waste (and, coincidentally, pollution) could help to create a favorable (or more favorable) image for that company. In the face of rising "consumerism" the good-will thus created may have intrinsic value for cooperators.

### 4. Visible leadership

Although the question of awareness of government efforts toward solid waste reduction was omitted from the field phase of this study, very few people in the groups had any idea that there is a currently functioning government agency concerned with the problem of solid waste management. Many women felt that they would be quite willing to become much more concerned about this problem and do more if they were led, if they were stimulated, inspired and encouraged periodically by a national or regional leader devoted to this subject. It is important to women to have a highly visible agency devoted to this problem with well-known, available and accessible (if only by mail) persons and organizations who may be contacted at any time for "expert" advice, guidance, lectures and demonstrations. Repeatedly, women said: "Tell me what to do, clearly and directly, and I'll do it, especially if you can show me it is important...and it does matter."

Careful thought should be given to the media by which the Agency makes its activities known and its influence felt. Television and radio, a Speakers' Bureau, demonstration projects and similar activities are appropriate. Use of recycled paper and appearance of the "recycled" symbol on stationery are appropriate. Creating additional solid wastes through wide distribution of unnecessary pamphlets or posters seems, somehow, inappropriate to the Agency's goals.

## C. Target Audiences

Undoubtedly, the homemaker is an important link in the chain for reducing household-generated solid wastes. Other elements of the community must not, however, be overlooked, as was partially indicated under "Community Mobilization" above.

One further important and influential force for altering attitudes and behavior should be recognized -- namely, the grade school child. School courses, lectures, films and demonstrations on ecology and solid waste management at various levels and in terms appropriate to these levels are indicated. Many parents have been favorably influenced on ecological problems by their school children. Information on solid waste management provided to school children is quickly disseminated to parents. Some adults look to the young people to educate them, and to lead the way to better solid waste management.

# VII. APPENDICES

## A. Methodology

### 1. Phase I (Qualitative)

The qualitative phase of this study consisted of 12 Group Depth Interviews conducted in six cities in conterminous United States. Experience has shown that the Group Depth Interview is most effective when there is a degree of homogeneity among respondents. Accordingly, the six groups were divided into age and income categories, as follows:

| Age | Annual Family Income | # of Groups |
|---|---|---|
| 20-35 years | Under $10,000 | 1 |
| 36-55 years | Under $10,000 | 1 |
| 20-30 years | Over $10,000 | 1 |
| 36-55 years | Over $10,000 | 1 |
| 20-55 years | Over $10,000 | 1 |
| 20-35 years | Under $12,000 | 2 |
| 36-55 years | Under $12,000 | 1 |
| 20-55 years | Under $12,000 | 1 |
| 20-35 years | Over $12,000 | 1 |
| 36-55 years | Over $12,000 | 2 |

Group Depth Interviews were divided into two waves. In order to presensitize respondents to the topic at hand, half the respondents in each wave were asked to keep a "diary" of the amount and kinds of solid waste generated by their household for a 24 to 48 hour period preceding the group session. The other half were asked both to keep a "diary" and to sort solid waste into paper, glass, cans or food garbage and to estimate the percentage of each. This exercise was voluntary on the part of the respondent.

Respondents for all groups were female heads of household, both single and married, and both with and without children living in the household.

2. Phase II (Quantitative)

- Sampling: Introduction

  National Analysts' basic design can be described as a self-weighting probability sample of households in that part of the United States defined as metropolitan in 1960. Stratification has been done by Census Region and degree of urbanization.

- Basic design

  The national sample is a sample of all private households in metropolitan United States. These are stratified into 9 geographic areas, corresponding to the Census Regions and Divisions. A second stratification, by degree of urbanization, creates two strata within each geographic area which, to avoid confusion with the geographic strata, are called "zones". These zones are defined as follows:

  Zone I - The area comprised of cities having a population of 50,000 or more.

  Zone II - Suburban -- that area in Standard Metropolitan Statistical Areas (SMSA's) outside Zone I.

  The sample within each stratum was drawn in successive stages. A Primary Sampling Unit (PSU) was defined as a city (or major subdivision of it) in Zone I and a county (or the non-city portion of a county) in Zone II. All of the metropolitan land area of the United States was assigned to such PSU's and one was drawn with probability proportional to size (i.e., the more populous the area the larger the probability of its being drawn into the sample) within each substratum. Since the objective in drawing was to obtain a First Stage Unit (FSU) of approximately 10,000 households, the first drawing frequently only identified a city or a county within which a further drawing had to be made to identify the FSU. In tracted areas Census tracts were combined so as to form FSU's of approximately 10,000 households. In non-tracted areas Enumeration Districst (ED's) were similarly combined. In each of the selected PSU's an FSU was drawn, again with probability proportional to size. Thus, the FSU, a cluster of approximately 10,000 households, is the contiguous unit of geographic area from which subsampling is done to meet the needs of each special survey.

It should be noted that Zone I is not identical to the Census definition of "Central cities". For example, Pasadena, California, with a population of 116,407 is in Zone I but is not a Census central city. Fargo, North Dakota, with population 46,662 is a central city, but is a part of Zone II, rather than Zone I. The advantage of National Analysts' definition of zones is that it isolates "suburbia", i.e., Zone II -- a population whose economic and social importance is ever-increasing in our society.

Double stratification into Census divisions and zones creates 68 strata (actually substrata) whose average size is about 500,000 households. The subdivision of the population into strata is shown in the following table:

| Geographic Region | Division | Zone I | Zone II | Total |
|---|---|---|---|---|
| Northeast | New England | 2 | 2 | 4 |
| | Middle Atlantic | 10 | 6 | 16 |
| North Central | E. North Central | 8 | 6 | 14 |
| | W. North Central | 2 | 2 | 4 |
| South | South Atlantic | 4 | 4 | 8 |
| | E. South Central | 2 | 1 | 3 |
| | W. South Central | 4 | 1 | 5 |
| West | Mountain | 2 | 1 | 3 |
| | Pacific | 6 | 5 | 11 |
| | | 40 | 28 | 68 |

- Identification of area segments

The 68 First Stage Units of approximately 10,000 households each were used as the initial clusters from which smaller clusters of households were drawn to identify respondents. A "segment" is a small area which can be identified on a map by the interviewer. It is a portion of an enumeration district in non-tracted areas and is a block (or blocks) in tracted areas. Two-hundred and forty (240) such segments were selected from the 68 First State Unit.

A detailed map of each segment was given to each interviewer after proper instruction and she listed each household in the segment. The list was sub-sampled identifying the households selected into the sample. The selection of segments and households within lists was made in such a way as to make the sample self-weighted.

A total of 2,747 Dwelling Units was selected. This yielded 2,606 occupied units and 1,282 completed interviews.

## . Definition of the eligible respondent

The eligible respondent was identified as "the female head of household". It should be noted, however, that the definition of the female head of household used differs from that used by Census. In this study the female head of household could be the wife of the male head of household or the female family member assuming major responsibility for the household if the wife was deceased. It could also be a woman living alone or a female member of the family with major responsibility for the household in those households without a male head. (The Census definition only includes individuals in these latter two categories as "female head of household".)

B. **Field Materials**

1. Questionnaire

2. Cards used in field administration of the interview. Note that each card indicates the question for which it was used. Full explanation of how it was used may be found in the appropriate question of the questionnaire.

NATIONAL ANALYSTS, INC.
Philadelphia, Pa.

Study #1-313
March, 1972
OMB #158-S-72002
Expires May 31, 1972

Segment #__________

Dwelling Unit #______

## SOLID WASTE DISPOSAL STUDY

Time Interview Started______ AM PM

Time Interview Ended ______ AM PM

Hello, I'm __________, from National Analysts, an opinion research company in Philadelphia. We are interviewing a representative sample of people throughout the United States for the Environmental Protection Agency about some problems confronting our country.

1. There are a number of problems which people say our country is facing today. We'd like to find out how serious you think some of these problems are. (PRESENT CARD A) This is a scale. We use it to help people show us how they feel about things. You will notice that one end says "Not at all serious" and the other says "Very serious". In between are the numbers "1" to "5". I am going to read some statements and I would like you to tell me the number which shows how you feel about each. The more serious you consider a problem, the higher the number you will name; the less serious you consider it, the lower the number you will name. There are no right or wrong answers -- I am interested in your first impressions. (READ EACH STATEMENT AND CIRCLE RESPONDENT'S ANSWER.)

| | Not At All Serious | | | | Very Serious |
|---|---|---|---|---|---|
| Crime and violence | 1 | 2 | 3 | 4 | 5 |
| Inflation | 1 | 2 | 3 | 4 | 5 |
| Protection of our environment | 1 | 2 | 3 | 4 | 5 |
| Taxes | 1 | 2 | 3 | 4 | 5 |
| Overpopulation | 1 | 2 | 3 | 4 | 5 |
| Using up our natural resources | 1 | 2 | 3 | 4 | 5 |
| Narcotics and drug usage | 1 | 2 | 3 | 4 | 5 |
| Deterioration of the cities | 1 | 2 | 3 | 4 | 5 |
| Racial problems | 1 | 2 | 3 | 4 | 5 |
| Transportation | 1 | 2 | 3 | 4 | 5 |
| Education | 1 | 2 | 3 | 4 | 5 |

2. One of the items I just read you was "protection of our environment." What does the phrase "protection of our environment" mean to you? (PROBE THOROUGHLY. BE SURE TO ASK: What else? Tell me more.)

3. When we talk about protecting our environment we are referring to problems concerned with pollution of air and water as well as the problems of solid waste and litter. One of the problems with which environmental protection concerns itself, therefore, is disposal of solid wastes. What do you think about when you hear the term "solid wastes"? (PROBE)

4. So that we are both talking about the same thing, when we say solid wastes we mean all the things that generally end up in trash containers or litter -- things like paper of various kinds, bottles and jars, plastic containers, discarded appliances and so on. Different communities have different arrangements to help people get rid of this kind of solid waste. How does your community help get rid of your solid waste?

CIRCLE AS MANY AS MENTIONED

IF "COLLECTED", PROBE FOR DETAILS. SUGGEST ALTERNATIVES IF NECESSARY

| | |
|---|---|
| Collected by city, town, etc. through own sanitation department | 1 |
| Collected by private collector contracted by city, town, etc. | 2 |
| Collected by private collector on own | 3 |
| Collected by private collector, but don't know arrangements | 4 |
| Respondent takes to dump or incinerator | 5 |
| Respondent burns it himself | 6 |
| Other (SPECIFY:) | 0 |
| Don't know | V |

5. As far as you know, is the cost of your trash collection included in your tax or rent money, billed separately, or paid for in some other way?

| | | |
|---|---|---|
| | Paid for by tax or rent money | 1 |
| | Billed separately | 2 |
| | Other (SPECIFY:) | 0 |
| SKIP TO Q.7 | Don't know | V |

6. (IF CODES "1", "2" OR "0" IN Q.5) Does it cost you the same regardless of how much trash you throw away, or does your payment depend on how much you throw out?

| | |
|---|---|
| Cost the same | 1 |
| Cost depends on amount (SPECIFY HOW:) | 2 |
| Other (SPECIFY:) | 0 |
| Don't know | V |

7. (EVERYONE) Just as a matter of interest, had you ever, until now, really thought of the amount of money it costs you in one way or another to dispose of your trash?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

8. Regardless of how it is removed from where you live, what finally happens to the trash you get rid of, as far as you know?

| | | | |
|---|---|---|---|
| CIRCLE AS MANY AS MENTIONED | | Taken to an open dump | 1 |
| | | Taken to a sanitary landfill | 2 |
| | | Taken to a dump -- don't know if sanitary landfill | 3 |
| | | Burned by respondent himself | 4 |
| | PROBE KIND OF INCINERATOR: "Is that with or without air pollution control devices?" | Burned in an incinerator with air pollution control devices | 5 |
| | | Burned in an incinerator without air pollution control devices | 6 |
| | | Burned in an incinerator -- don't know if has air pollution control devices | 7 |
| | | Other (SPECIFY:) | 0 |
| | | Don't know what happens to it | V |

9. The most frequently used size of trash can is 20 gallons. This kind of can is about waist high. If you dispose of trash more than once a week, count all the trash you get rid of. If you dispose of some in other containers or tied up, etc., include that trash in your estimate as if you put that trash into those trash cans. About how many of these 20 gallon cans do you fill up in an average week? Please give me an answer to the nearest quarter of a can.

☐ cans weekly

10. One suggestion some people have made to cut down on the solid waste problem is "recycling." What does this term mean to you? (PROBE: What else?)

11. When we talk about recycling, we mean that some kinds of used materials, such as bottles, paper, cans, and so on, are reprocessed and used to make new materials. For example, metal objects can be melted down to make new metal. I'd like to read you a list of some items. For each, please tell me whether or not that item can be recycled, as far as you know.

| | Can be Recycled | Cannot be Recycled | Some Can, Some Can't | Don't know |
|---|---|---|---|---|
| The cans in which foods and beverages are packaged | 1 | 2 | 3 | V |
| Newspapers | 1 | 2 | 3 | V |
| Magazines with "slick" paper, like "Life", "Newsweek" | 1 | 2 | 3 | V |
| Cardboard boxes | 1 | 2 | 3 | V |
| Plastic bottles | 1 | 2 | 3 | V |
| Bottles from soft drinks and beer | 1 | 2 | 3 | V |
| Tires from cars | 1 | 2 | 3 | V |
| Junk cars | 1 | 2 | 3 | V |
| Old clothing | 1 | 2 | 3 | V |

12. Earlier I mentioned cans in which food and beverages are packaged. These may be made of different kinds of metals or metal combinations. What different metals or combinations do you know of that are used for such containers -- or do you think they are all made of the same materials? (RECORD IN COL. A BELOW)

13. (IF MORE THAN ONE METAL OR COMBINATION MENTIONED, FOR EACH ASK:) Can cans made of METAL(S) be recycled or not, as far as you know? (RECORD IN COL. B BELOW)

| Col.A - Q.12 | Col. B - Q.13 | | | |
|---|---|---|---|---|
| | Can be Recycled | Cannot be Recycled | Some Can, Some Can't | Don't Know |
| | 1 | 2 | 3 | V |
| | 1 | 2 | 3 | V |
| | 1 | 2 | 3 | V |
| | 1 | 2 | 3 | V |
| | 1 | 2 | 3 | V |

| | |
|---|---|
| All made of same material | 0 |
| Don't know | V |

14. I am going to read you some ideas about pollution and solid waste. (PRESENT CARD B) This is a scale like the one we used before, except this time the ends say "Disagree" and "Agree". For each idea, please tell me the number from "1" to "5" which shows how you feel.

| | Disagree | | | | Agree |
|---|---|---|---|---|---|
| There is little that individual people can do about pollution | 1 | 2 | 3 | 4 | 5 |
| People in towns which do not have a recycling program would be more likely to want such a program if other, nearby towns, had an active program for handling solid wastes | 1 | 2 | 3 | 4 | 5 |
| We need to do something about pollution now before the problem gets too big to handle | 1 | 2 | 3 | 4 | 5 |
| Most solid waste is caused by industry, not by individual people | 1 | 2 | 3 | 4 | 5 |
| Recycling of solid wastes would help greatly in cutting down on pollution | 1 | 2 | 3 | 4 | 5 |
| The problem of pollution in this country is really not as big as some people say it is | 1 | 2 | 3 | 4 | 5 |

CONTINUED

Q.14 (continued)

| | Disagree | | | | Agree |
|---|---|---|---|---|---|
| People would be more willing to buy things made of or packaged in recycled materials if it cost less than things made of or packaged in all new materials | 1 | 2 | 3 | 4 | 5 |
| The cost of cleaning up pollution should really fall on industry, not on the average individual | 1 | 2 | 3 | 4 | 5 |
| Manufacturers should be taxed to help dispose of solid wastes if they do not use a certain amount of recycled materials in their products or packaging | 1 | 2 | 3 | 4 | 5 |
| The government must spend more money to clean up pollution | 1 | 2 | 3 | 4 | 5 |
| If people knew which brands of the products they buy are made of or packaged in recycled material, they would be more likely to buy those brands | 1 | 2 | 3 | 4 | 5 |

15. Some of the ideas I just read you had to do with recycling. (PRESENT CARD C) Some of the possible benefits people claim for recycling are listed on this card. Which of these would you say is the most important benefit of recycling? Which is second most important? Third? Fourth? (CIRCLE ONE CODE IN EACH OF THE FOUR COLUMNS)

| | Most Important | Second | Third | Fourth |
|---|---|---|---|---|
| It would cut the cost of trash collection and disposal | 1 | 1 | 1 | 1 |
| It would mean less trash was burned, and that would cut down air pollution | 2 | 2 | 2 | 2 |
| It would save our resources by using up less iron ore, fewer trees, and so on | 3 | 3 | 3 | 3 |
| There would be less trash in dumps, so our cities and countryside would look better | 4 | 4 | 4 | 4 |
| It would let us use the land that would otherwise be a dump for better things | 5 | 5 | 5 | 5 |
| It would mean less litter on our streets, highways and countryside | 6 | 6 | 6 | 6 |

16. One way to recycle some solid waste is to have people separate their trash in different containers either for pick-up or for delivery to a recycling center. Putting aside, for the moment how the trash gets into the recycling plant, suppose you were asked to separate some of your trash from the rest. Would you be willing or unwilling to do so if you were asked to separate out:

CIRCLE EITHER CODE OR ASTERISK ON EACH LINE

| | Willing | Unwilling |
|---|---|---|
| Only newspapers (Willing or unwilling?) | 1 | * |
| Only glass bottles or jars and cans (Willing or unwilling?) | 2 | * |
| Both, but putting newspapers in one container and glass and cans in another container | 3 | * |
| Both, but putting them together in a separate container from other trash | 4 | * |
| FOR CODING ONLY: NONE | 5 | * |

17. Do you think that separating (READ CATEGORIES, ONE AT A TIME) should be voluntary, or do you think it should be required of everyone? (REPEAT FOR EACH CATEGORY)

CIRCLE EITHER CODE OR ASTERISK ON EACH LINE

| | Voluntary | Required |
|---|---|---|
| Only newspapers (Voluntary or required?) | 1 | * |
| Only glass bottles or jars and cans (Voluntary or required?) | 2 | * |
| Both, but putting newspapers in one container and glass and cans in another container | 3 | * |
| Both, but putting them together in a separate container from other trash | 4 | * |
| FOR CODING ONLY: NONE | 5 | * |

18. Why do you feel that way? (PROBE)

19. Suppose that all residents of this town were required to separate trash into the three categories I mentioned: one, glass bottles or jars and cans; two, newspapers; and three, everything else. If this were so, how easy or difficult would this be for you?

| | | |
|---|---|---|
| SKIP TO Q.21 | Very easy | 1 |
| | Easy | 2 |
| | Neither easy nor difficult | 3 |
| | Difficult | 4 |

20. (IF CODE "4" TO Q.19) Why would this be difficult for you? (PROBE)

21. (EVERYONE) Now I'm going to read you some possible actions that people might take to help cut down the solid waste problem. For each tell me, whether in the past year you have done this regularly, occasionally, or not at all. (READ ITEMS IN COL. A, USING ITALICIZED VERB. RECORD IN COL. B BELOW)

22. (FOR EACH "NOT AT ALL" IN COL. B, ASK:) Would you be willing to (ITEM "NOT AT ALL") on a voluntary basis? (READ FROM COL. A, RECORD IN COL. C BELOW)

23. (FOR EACH ITEM IN COL. A) Do you think people should be required by law to (ITEM)? (RECORD IN COL. D)

| | Col.B Q.21 | | | Col.C Q.22 | | Col.D Q.23 | |
|---|---|---|---|---|---|---|---|
| Col.A | Regularly | Occasionally | Not at All | Yes | No/DK | Yes | No |
| *(Used)* Use only returnable deposit bottles for soft drinks and beer | 1 | 2 | 3 | 1 | * | 1 | * |
| *(Saved)* Save bottles and jars and return them to a collection point | 1 | 2 | 3 | 2 | * | 2 | * |
| *(Saved)* Save newspapers and *(returned)* return them to a collection point | 1 | 2 | 3 | 3 | * | 3 | * |
| *(Saved)* Save cans from soft drinks, beer and canned foods, and return them to a collection center | 1 | 2 | 3 | 4 | * | 4 | * |
| *(Saved)* Save newspapers, bottles, jars and cans for someone to come collect | 1 | 2 | 3 | 5 | * | 5 | * |
| *(Taken)* Take back large grocery bags to the supermarket so your purchases *(could)* can be put in them again | 1 | 2 | 3 | 6 | * | 6 | * |
| *(Avoided)* Avoid products which come in plastic bottles or packages | 1 | 2 | 3 | 7 | * | 7 | * |
| *(Avoided)* Avoid products which come with unnecessary or too much packaging | 1 | 2 | 3 | 8 | * | 8 | * |
| Cut down on usage of paper products such as paper towels, cups, etc. | 1 | 2 | 3 | 9 | * | 9 | * |
| *(Paid)* Pay a tax on non-returnable one-way bottles | 1 | 2 | 3 | 0 | * | 0 | * |
| *(Bought)* Buy brands of products which are made of or packaged in recycled materials | 1 | 2 | 3 | V | * | V | * |

24. Here are some things that some people may believe would be useful in cutting down the solid waste problem. For each, please tell me whether you think it would or would not be helpful in this matter. (CIRCLE ONE CODE ON EACH LINE)

| | Helpful | Not Helpful | Don't Know |
|---|---|---|---|
| Putting trash out in plastic bags, rather than in garbage cans (Helpful or not helpful?) | 1 | 2 | V |
| Recapping tires | 1 | 2 | V |
| Buying a Christmas tree with roots and planting it later | 1 | 2 | V |
| Buying products packaged in paper, rather than in plastic | 1 | 2 | V |
| Making a compost pile out of leaves, dead plants, etc. | 1 | 2 | V |
| Using an appliance that may be old or out of style, rather than buying a new one | 1 | 2 | V |
| Buying aluminum rather than steel cans | 1 | 2 | V |
| Using a trash masher | 1 | 2 | V |

25. Do you know of any specific groups or organizations that have been participating in recycling activities in your immediate area?

| | | |
|---|---|---|
| | Yes | 1 |
| SKIP TO Q.27 | No | 2 |

26. During the past year, have you, yourself... (READ ITEMS BELOW. RECORD IN COL. A)

27. (FOR EACH "NO" TO Q.26, OR FOR ALL ITEMS IF R. SKIPPED FROM Q.25) Would you be willing to ...(RECORD IN COL.B)

| | Col.A Q.26 | | Col.B Q.27 | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| Help(ed) such a group in publicity or in promotional work? | 1 | * | 1 | * |
| Give(n) them any materials for recycling? | 2 | * | 2 | * |
| Help(ed) collect materials for recycling? | 3 | * | 3 | * |

28. (EVERYONE) Do you think that people should have to pay extra for trash collection if they throw away more than some specified amount per person or family?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

29. Do you think people should have to pay extra for trash collection if they do not separate bottles, cans, newspapers; and everything else into three containers for trash collection?

| | |
|---|---|
| Yes | 1 |
| No | 2 |

30. Assuming that bottles, cans and newspapers must be separated from other trash, would you prefer to do this separation yourself, or to have increased taxes to cover the cost of having the city or town separate these materials?

| | |
|---|---|
| Do it myself | 1 |
| Have city or town do it | 2 |
| Other (SPECIFY:) | 0 |
| Neither | V |

31. Would you prefer to have the city or town do the separating for you if the cost to you would be:

| | Yes | No |
|---|---|---|
| $1 a year | 1 | * |
| $5 a year | 2 | * |
| $10 a year | 3 | * |
| $25 a year | 4 | * |

32. Some products are, or can be, made out of recycled materials; sometimes by mixing the recycled, used material with new material.

In terms of appearance, serviceability or usefulness, would you expect a newspaper printed on paper that uses recycled paper to be just as good as all new paper, or not? (CIRCLE ONE CODE ON TOP LINE)

ASK: In terms of appearance, serviceability, or usefulness, how about (ITEM)? FOR EACH REMAINING ITEM.

|  | Just As Good | Not As Good | Not Sure, Don't Know |
|---|---|---|---|
| Newspapers | 1 | 2 | V |
| Cans in which food and beverages are packaged | 1 | 2 | V |
| Glass bottles made from crushed and melted-down used bottles | 1 | 2 | V |
| Boxes for products like hardware, furniture, etc., made from used paper | 1 | 2 | V |
| Boxes for products like cereal, made from used paper | 1 | 2 | V |
| Wool clothing made partly from reprocessed used wool items | 1 | 2 | V |
| Recapped tires | 1 | 2 | V |

33. As far as you know, have you ever bought newspapers printed on recycled paper? (CIRCLE ONE CODE ON TOP LINE) REPEAT: Have you ever bought...FOR OTHER ITEMS LISTED.

|  | Have Bought | Have Not | Not Sure, Don't Know |
|---|---|---|---|
| Newspapers | 1 | 2 | V |
| Food and beverages in recycled cans | 1 | 2 | V |
| Products in glass bottles made from crushed and melted-down used bottles | 1 | 2 | V |
| Products like hardware, furniture, etc., in cartons made from used paper | 1 | 2 | V |
| Products like cereal, in packages made from used paper | 1 | 2 | V |
| Wool clothing made partly from reprocessed used wool items | 1 | 2 | V |
| Recapped tires | 1 | 2 | V |

34. I am going to read you some statements about keeping house. I want you to tell me the number on this card which shows how much you agree or disagree with each statement. (HAND CARD D)

(READ STATEMENTS TO THE RESPONDENT ONE AT A TIME AND RECORD THE RESPONSE BELOW.)

| | DISAGREE | | | AGREE | | |
|---|---|---|---|---|---|---|
| | Very Much | Some-what | A Little | A Little | Some-what | Very Much |
| Cooking is one of the things I enjoy most | 1 | 2 | 3 | 4 | 5 | 6 |
| Most friends and neighbors don't care how you keep your house as long as they enjoy themselves when they visit you | 1 | 2 | 3 | 4 | 5 | 6 |
| Most people judge a woman first by how well she keeps her house clean | 1 | 2 | 3 | 4 | 5 | 6 |
| I know that house cleaning is an important responsibility, but other activities that we have are important, too | 1 | 2 | 3 | 4 | 5 | 6 |
| There is nothing I enjoy more than having a clean, tidy house that will impress my friends and neighbors | 1 | 2 | 3 | 4 | 5 | 6 |
| I like bright colors in decorating my home | 1 | 2 | 3 | 4 | 5 | 6 |
| People should make a real point of teaching children to keep their rooms neat and clean | 1 | 2 | 3 | 4 | 5 | 6 |
| I like to work with my hands on do-it-yourself jobs around the house | 1 | 2 | 3 | 4 | 5 | 6 |
| People cannot be trained to become good housekeepers...they are born that way | 1 | 2 | 3 | 4 | 5 | 6 |
| House cleaning is just like cooking. It's something a woman has to do | 1 | 2 | 3 | 4 | 5 | 6 |
| All cleaning in this house is done according to a regular schedule, regardless of anything else | 1 | 2 | 3 | 4 | 5 | 6 |
| Some women really seem to enjoy house cleaning, but I am not one of them | 1 | 2 | 3 | 4 | 5 | 6 |
| There's not much point today in hiring outside help to do some of your housework. They're interested only in the money they make--not in the job they do | 1 | 2 | 3 | 4 | 5 | 6 |
| We must keep our house clean so as not to have rats or vermin | 1 | 2 | 3 | 4 | 5 | 6 |
| A husband has to work hard at his job away from home. I think a wife should work hard at her job in the house | 1 | 2 | 3 | 4 | 5 | 6 |
| I hate to throw anything away, so we always have stacks of magazines or newspapers or letters that have to be stored away somewhere | 1 | 2 | 3 | 4 | 5 | 6 |

682.

35. Do you have a...
(CIRCLE CODE OR ASTERISK ON EACH LINE)

| | Yes | No |
|---|---|---|
| Garage? | 1 | * |
| Basement (for your own use)? | 2 | * |
| Space outside for trash cans? | 3 | * |

36. Where are your trash cans -- that is, the place where you store trash after you empty waste baskets and so on -- usually kept?

| | |
|---|---|
| Outside, inside a bin or box | 1 |
| Outside, not inside anything | 2 |
| Garage | 3 |
| Basement | 4 |
| Inside the house--utility room | 5 |
| Inside the house--kitchen | 6 |
| Other (SPECIFY:) | 0 |

We have just a few questions for statistical purposes. (PRESENT CARD E)

37. Into which group at the top of the card does your age fall? Just tell me the number.

| | |
|---|---|
| Under 25 | 1 |
| 25 - 34 | 2 |
| 35 - 44 | 3 |
| 45 - 54 | 4 |
| 55 - 64 | 5 |
| 65 or older | 6 |

38. (PRESENT CARD F) Into which group does the last year of school you completed fall? Just tell me the number.

| | |
|---|---|
| Grammar school | 1 |
| Some high school | 2 |
| High school completed | 3 |
| Some college | 4 |
| College completed | 5 |

39. Are you married, widowed or single?

| | | |
|---|---|---|
| | Married | 1 |
| SKIP TO Q.41 | Widowed, divorced, separated | 2 |
| SKIP TO Q.42 | Never married | 3 |

40. What kind of work does your husband do and for what kind of company?

Job________________________

Company________________________

41. How many children live here with you who are...

| | | | | | |
|---|---|---|---|---|---|
| Under 6 | 0 | 1 | 2 | 3 | 4 or more |
| 6 to 11 | 0 | 1 | 2 | 3 | 4 or more |
| 12 to 17 | 0 | 1 | 2 | 3 | 4 or more |
| 18 or older | 0 | 1 | 2 | 3 | 4 or more |

42. Are you, yourself, employed...

| | | |
|---|---|---|
| | Full-time | 1 |
| | Part-time | 2 |
| SKIP TO Q.44 | Not at all | 3 |

43. What kind of work do you do and for what kind of company?

Job________________________

Company________________________

44. (EVERYONE) Finally, (PRESENT CARD G) which group includes your family income, before taxes? Just tell me the number

| | |
|---|---|
| Under $5,000 | 1 |
| $5,000 - $7,499 | 2 |
| $7,500 - $9,999 | 3 |
| $10,000 - $12,499 | 4 |
| $12,500 - $14,999 | 5 |
| $15,000 - $19,999 | 6 |
| $20,000 or more | 7 |

THANK YOU FOR YOUR COOPERATION.

FROM OBSERVATION

| | | |
|---|---|---|
| Race: | White | 1 |
| | Black | 2 |
| | Oriental | 3 |
| | Other (SPECIFY:) | 0 |

Respondent lives in a...

| | |
|---|---|
| Row house (houses attached on both sides | 1 |
| Duplex house (house attached on one side) | 2 |
| Detached house | 3 |
| Low-rise apartment (one or two stories) | 4 |
| Middle-rise apartment (three or four stories) | 5 |
| High-rise apartment (five or more stories) | 6 |
| Other (SPECIFY:) | 0 |

Respondent's name________________________ Tel. #____________

Address____________________________________

City________________ State____________ Zip code________

Interviewer________________________ S.S. #____________

Date________________

1-313
Q.1

## CARD A

| Not at all Serious | | | | Very Serious |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

## CARD B

**Disagree** 1 | 2 | 3 | 4 | 5 **Agree**

1-313
Q.15

## CARD C

1. It would cut the cost of trash collection and disposal

2. It would mean less trash was burned, and that would cut down air pollution

3. It would save our resources by using up less iron ore, fewer trees, and so on

4. There would be less trash in dumps, so our cities and countryside would look better

5. It would let us use the land that would otherwise be a dump for better things

6. It would mean less litter on our streets, highways and countryside

1-313
Q.34

## CARD D

1. Disagree very much
2. Disagree somewhat
3. Disagree a little
4. Agree a little
5. Agree somewhat
6. Agree very much

1-313
Q.37

## CARD E

1. Under 25
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65 or older

-68v-

1-313
Q.38

## CARD F

1. Grammar school
2. Some high school
3. High school completed
4. Some college
5. College completed

-68W-

1-313
Q.44

## CARD G

| | Weekly | Monthly | Yearly |
|---|---|---|---|
| 1. | Under $96 | Under $417 | Under $5,000 |
| 2. | $97 - $144 | $418 - $625 | $5,000 - $7,499 |
| 3. | $145 - $192 | $626 - $833 | $7,500 - $9,999 |
| 4. | $193 - $240 | $834 - $1,042 | $10,000 - $12,499 |
| 5. | $241 - $288 | $1,043 - $1,250 | $12,500 - $14,999 |
| 6. | $289 - $385 | $1,251 - $1,667 | $15,000 - $19,999 |
| 7. | $386 or more | $1,668 or more | $20,000 or more |

## C. Statistical Analysis

- Data were reviewed by standard cross-tabulations and by multivariate analysis.

- Standard cross-tabulations used in analysis included, in addition to totals:

  - Census region:
    - Northeast
    - Central
    - South
    - West
  - Urbanization:
    - Zone I
    - Zone II

    (Refer to Sampling Section above -- Appendix A)
  - Age of respondent:
    - Under 25 years
    - 25-34 years
    - 35-54 years
    - 55 years and older
  - Annual family income:
    - Under $5,000
    - $5,000-$9,999
    - $10,000-$14,999
    - $15,000 and over
  - Employment or lack of employment outside the home
  - Race:
    - White
    - Black

    (Recorded by the interviewer by observation)
  - Education:
    - Less than high school
    - Completed high school
    - Beyond high school
  - Type of dwelling:
    - Detached house
    - Row or duplex
    - Apartment

- Concern with protection of the environment:

  High
  Moderate
  Low

- Concern with using up natural resources:

  High
  Moderate
  Low

## D. Segmentation Analysis

### 1. Non-technical explanation

Factor analysis was used to group or segment together people whose attitudes toward housekeeping were highly correlated. These attitudes were measured by housewive's extent of agreement or disagreement with 16 statements dealing with daily housecleaning and home maintenance. The statements will be found in Question 34 of the questionnaire -- Appendix B of this report.

Using regression analysis in a way described in the technical section of this Appendix, the segments were given names. The segments and the proportion of the people in each segment are given below.

**Segments Based on Housewive's Attitudes toward Housekeeping**

| Segment Number | Name | Percent of Respondents in Segment |
|---|---|---|
| 1 | Dedicated | 45% |
| 2 | Hit-or-miss | 27% |
| 3 | Obligated | 28% |
| 4 | Disinterested | 7% |
| 5 | Take it in stride | 25% |
| 6 | Unassigned | 8% |

Notice that the total adds to more than 100%. This is because some housewives fit well into more than one group. For example, a person's responses might be similar to those in both the "Dedicated" and "Obligated" groups and thus would be assigned to both groups. In the same way, 8% of the respondents exhibited attitudes not sufficiently related to warrant their inclusion in any of the six groups.

The average responses of these six segments representing different attitudes toward housekeeping were cross-tabulated against all data generated by the study. It would have been very interesting to discover, for example, that the large segment of "Dedicated" housewives have the least concern for problems of solid waste disposal. The cross-tabulations, however, revealed few differences among groups and no consistent trends. Those that were found are mentioned throughout the report.

This negative result is not without value. It means that attitudes toward housekeeping are, for practical purposes, not related to attitudes toward solid waste.

## 2. Technical description

- Factor analysis is a multivariate statistical procedure which is useful in efficiently summarizing the interrelationships among many variables. It achieves this end by developing a set of basic components or factors upon which all of the variables are represented in varying degrees. The extent of this representation is called the factor loadings for each variable. Those variables loaded high on a factor have the most importance in determining the score for that factor. Because the number of factors is usually considerably smaller than the number of variables, the resulting structure lends itself more readily to conceptualization and interpretation.

For example, one could measure political attitudes by having a large number of people express their degree of agreement with a large number of items dealing with international relations, civil rights issues, economic issues, etc. If this were done and the items were correlated it would be discovered that people who agreed with some items also tended to agree with certain others and vice versa. The responses to items are related and a factor analysis would reveal and summarize the structure of those relationships. One factor which would certainly emerge is a liberal-conservative factor. This would be revealed by the fact that items loaded high on this factor would be those which characterize the "liberal" viewpoint, while those loaded at the other end would reflect a "conservative" viewpoint. Other factors would emerge also, and would similarly be characterized by examining the items with high and low loadings.

Several types of factor analyses are commonly performed depending upon the data available and the needs of the researcher. The two types most often employed are known as R-factor analysis and Q-factor analysis.

R-factor analysis operates upon the matrix of item intercorrelations when given a set of items or objects rated by a number of individuals. It produces the factors underlying the items and thus helps to organize them into a parsimonious and meaningful structure. The resulting factors are described statistically in terms of their loadings or correlations with the items and are interpreted based upon the patterns of those loadings. In the example of a political attitude study cited above, an R-factor analysis was described.

Q-factor analysis is used to intercorrelate people's scores. While item correlations reflect the degree to which items are similarly responded to, people correlations reflect the degree to which pairs of individuals respond similarly to items. A Q-factor analysis operates upon the matrix of people intercorrelations. It produces the factors underlying the people and organizes them into a concise structure. Instead of factors which characterize types or dimensions of items, the factors in a Q-analysis characterize types or dimensions of people. For example, in the political attitude study used for illustrative purposes above, if a Q-analysis were performed, factors might emerge such as income, age, and occupational status. The nature of each factor would be determined by examining the characteristics of the people with high and low loadings on it just as a factor in an R-analysis is labelled by examining the nature of items with high and low loadings.

- Multivariate segmentation of housewives was undertaken because it was postulated that housewives' concerns about and willingness to participate in various aspects of solid waste recycling might be strongly related to and differentiated by a wide variety of their characteristics and attitudes.

  Accordingly, in addition to inclusion of standard demographic variables (age, education, family income, etc.), the questionnaire contained a set of 16 self-referrent statements vis-a-vis the routine of day-to-day housecleaning and home maintenance. Housewives' responses to these statements -- ranging on a six-point scale from "Disagree very much" to "Agree very much" -- have served as the input for a principal axis multiple factor analysis that has afforded a multivariate Q-segmentation of housewives. This factor analysis yielded five primary segments of housewives. The women in each segment exhibit a unique pattern of attitudes relating to housecleaning and home maintenance that is differentiated clearly from the attitude patterns of persons in every other segment.

  The mathematics of multiple factor analysis, while completely straightforward and well-documented as to validity, also is extremely tedious and too complex to describe succinctly. Chapters 9 and 14 of Modern Factor Analysis, Harry H. Harman, the

University of Chicago Press, 1962, give a complete exposition of theory and procedures. Essentially, the primary objective of factor analysis is to attain a more tightly organized description of observed data.

The programming employed to perform the multiple factor analysis for this study is a modification of the BIMED X72 procedure especially refined for use by National Analysts on a time-sharing UNIVAC 1108 owned by Sci-Tec, Inc. of Wilmington, Delaware. Sequentially, it included the following steps:

- An R-analysis of the set of 16 self-referrent statements across all 1,281 respondent housewives. All accountable variance in the basic matrix was comprehended by two R-vectors, rotated to final solution by Varimax.

- Computation of R-factor scores for each respondent, and selection of 196 of these -- the 49 highest positively-scored and 49 highest negatively-scored on each vector.

- A Q-analysis of these 196 respondents. More than 80% of all accountable variance in the basic matrix was comprehended by five Q-vectors, again rotated to final solution by Varimax.

  (Note that the absolute capacity of the computer requires this multi-step procedure. A 196 x 196 correlation matrix is the largest that can be handled by UNIVAC 1108 for the principal factor procedure.)

- Computation of multiple regression equations, one for each Q-vector, to predict the observed Q-factor loadings for each of the 196 respondents from their responses to the 16 statements.

- Computation of Q-factor loadings, using these multiple regression equations, for each of the remaining 1,085 housewives who were not included in the original Q-analysis.

On the basis of the computed Q-factor loadings, respondents were assigned to Q-factor segments. Any loading ≥ of 0.35 was used for this assignment, with this resulting distribution:

| | | |
|---|---|---|
| Q-factor | 1 | 45.1% |
| | 2 | 27.2 |
| | 3 | 28.5 |
| | 4 | 6.9 |
| | 5 | 25.9 |
| No significant loading (≥ 0.35) | | 7.8 |

It is apparent that the fairly lenient level of factor loading employed has enabled a sizable proportion (33.6%) of housewives to be assigned to more than one Q-segment. Note, however, that only about 8% have not been classified into any segment.

The Beta-weights of the several multiple regression equations developed to predict Q-factor loadings provide a convenient means of profiling each Q-segment in terms of the statements most heavily involved in determining "belongingness" to that segment. Such profiles for each of the five Q-segments follow. The semantic handles assigned to each segment are arbitrary, though they are intended to reflect what appears to be the overall character of the segments vis-a-vis both the statements agreed with and the statements disagreed with.

It should be noted that despite the hypotheses that attitudes and behavior would vary with attitudes toward homemaking, consistent trends failed to emerge.

## Q-Factor Segment Profiles

**Q-Factor I - "Dedicated"**

| Statement # | Beta-Weights | |
|---|---|---|
| 01 | +.1736 | Cooking is one of the things I enjoy most |
| 15 | +.1586 | A husband has to work hard at his job |
| 05 | +.1432 | Nothing I enjoy more than a clean house to impress friends |
| 14 | +.1072 | Must keep house clean so as not to have rats |
| 11 | +.1014 | All cleaning is done according to schedule |
| 07 | +.0985 | Should make a real point of teaching children |
| 10 | +.0797 | Housecleaning is just like cooking |
| 08 | +.0718 | I like to work with my hands |
| 03 | +.0674 | Most people judge a woman |
| 06 | +.0562 | I like bright colors |
| 13 | -.0274 | There's not much point in hiring outside help |
| 16 | -.0358 | I hate to throw anything away |
| 04 | -.1198 | Housecleaning is an important responsibility, but... |
| 12 | -.1719 | Some women enjoy housecleaning, but I'm not one of them |
| 02 | -.3090 | Friends and neighbors don't care how you keep house |
| 09 | -.3630 | People cannot be trained to become good housekeepers |

## Q-Factor II - Hit or miss

| Statement # | Beta-Weights | Hit-or-miss |
|---|---|---|
| 01 | +.2899 | Cooking is one of the things I enjoy most |
| 04 | +.2646 | Housecleaning is an important responsibility, but... |
| 12 | +.1568 | Some women enjoy housecleaning, but I'm not one of them |
| 08 | +.1329 | I like to work with my hands |
| 02 | +.1107 | Friends and neighbors don't care how you keep house |
| 06 | +.0986 | I like bright colors |
| 07 | +.0305 | Should make a real point of teaching children |
| 03 | -.0036 | Most people judge a woman |
| 14 | -.0458 | Must keep house clean so as not to have rats |
| 16 | -.1143 | I hate to throw anything away |
| 15 | -.1256 | A husband has to work hard at his job |
| 05 | -.1611 | Nothing I enjoy more than a clean house to impress friends |
| 13 | -.2053 | There's not much point in hiring outside help |
| 09 | -.2212 | People cannot be trained to become good housekeepers |
| 10 | -.2259 | Housecleaning is just like cooking |
| 11 | -.2805 | All cleaning is done according to schedule |

Q-Factor III - Obligated

| Statement # | Beta-Weights | |
|---|---|---|
| 10 | +.2657 | Housecleaning is just like cooking |
| 12 | +.2374 | Some women enjoy housecleaning, but I'm not one of them |
| 14 | +.2119 | Must keep house clean so as not to have rats |
| 04 | +.1280 | Housecleaning is an important responsibility, but... |
| 13 | +.1222 | There's not much point in hiring outside help |
| 15 | +.1144 | A husband has to work hard at his job |
| 02 | +.0932 | Friends and neighbors don't care how you keep house |
| 06 | +.0365 | I like bright colors |
| 07 | +.0308 | Should make a real point of teaching children |
| 08 | -.0285 | I like to work with my hands |
| 16 | -.0809 | I hate to throw anything away |
| 05 | -.0841 | Nothing I enjoy more than a clean house to impress friends |
| 09 | -.1143 | People cannot be trained to become good housekeepers |
| 03 | -.1956 | Most people judge a woman |
| 01 | -.2958 | Cooking is one of the things I enjoy most |
| 11 | -.4987 | All cleaning is done according to schedule |

## Q-Factor IV - Disinterested

| Statement # | Beta Weights | |
|---|---|---|
| 12 | +.6924 | Some women enjoy housecleaning, but I'm not one of them |
| 13 | +.3575 | There's not much point in hiring outside help |
| 09 | +.2975 | People cannot be trained to become good housekeepers |
| 01 | +.1097 | Cooking is one of the things I enjoy most |
| 03 | +.0900 | Most people judge a woman |
| 11 | +.0750 | All cleaning is done according to schedule |
| 04 | +.0388 | Housecleaning is an important responsibility, but... |
| 08 | +.0016 | I like to work with my hands |
| 05 | -.0008 | Nothing I enjoy more than a clean house to impress friends |
| 06 | -.0114 | I like bright colors |
| 14 | -.0246 | Must keep house clean so as not to have rats |
| 07 | -.0359 | Should make a real point of teaching children |
| 10 | -.0387 | Housecleaning is just like cooking |
| 15 | -.0974 | A husband has to work hard at his job |
| 02 | -.6079 | Friends and neighbors don't care how you keep house |
| 16 | -.6471 | I hate to throw anything away |

## Q-Factor V - Take it in stride

| Statement # | Beta-Weights | Take it in stride |
|---|---|---|
| 02 | +.3573 | Friends and neighbors don't care how you keep house |
| 09 | +.2567 | People cannot be trained to become good housekeepers |
| 04 | +.1395 | Housecleaning is an important responsibility, but... |
| 11 | +.1220 | All cleaning is done according to schedule |
| 06 | +.0829 | I like bright colors |
| 05 | +.0692 | Nothing I enjoy more than a clean house to impress friends |
| 03 | +.0671 | Most people judge a woman |
| 10 | +.0527 | Housecleaning is just like cooking |
| 08 | +.0503 | I like to work with my hands |
| 15 | +.0254 | A husband has to work hard at his job |
| 07 | +.0162 | Should make a real point of teaching children |
| 14 | +.0059 | Must keep house clean so as not to have rats |
| 13 | -.0117 | There's not much point in hiring outside help |
| 01 | -.0198 | Cooking is one of the things I enjoy most |
| 16 | -.4847 | I hate to throw anything away |
| 12 | -.5306 | Some women enjoy housecleaning, but I'm not one of them |

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